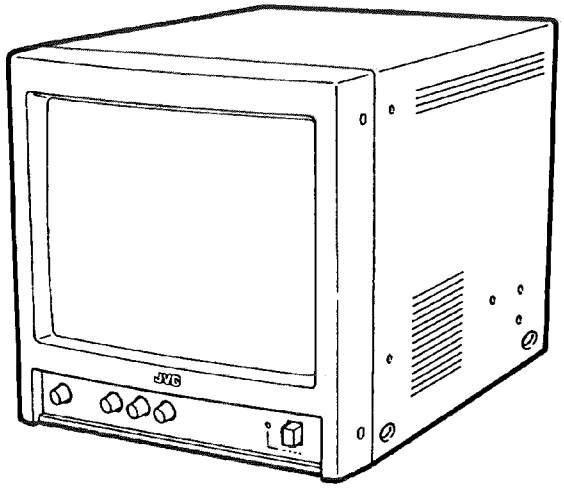
JVC

SERVICE MANUAL

COLOUR VIDEO MONITOR

TM-A10E-K

BASIC CHASSIS
A10



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SPECIFICATIONS

Item	Content	Item	Content
Colour system	PAL	Video input	1 line, BNC×2 (with 1 bridge connected output), 1Vp-p, 75Ω, negative sync, bridge connection possible (termination switch provided)
Picture tube	25cm measured diagonally, 90°deflection, in-line gun, vertical stripe phosphor pitch 0.5mm		
Screen size	173mm×136mm (W×H)		
Scanning frequency	(H) 15.625kHz (V) 50Hz	Audio input	1 line (monaural), RCA×2 (with 1 bridge connected output), 0.5Vrms, high impedance, bridge connection possible
Horizontal resolution	280 TV lines or more	Power requirements	230V AC, 50Hz
High Voltage	22kV ± 1kV (at zero been current)	Power consumption	0.33A
Audio power output	1W (monaural)	Dimensions	222mm×227mm×317mm (W×H×D)
Speaker	8cm round type×1, 8Ω	Mass	7.0kg
Operation temperature	0-40°C (20-80% RH)		

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No.51112
Mar.1996

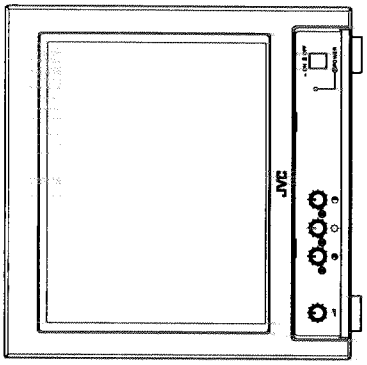
SAFETY PRECAUTIONS

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replace ment components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may cause shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

WARNING

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

OPERATING INSTRUCTIONS



COLOUR VIDEO MONITOR

TM-A10E-K

INSTRUCTIONS

JVC

TM-A10E-K COLOUR VIDEO MONITOR

CQ40254-001
0396-K-U-VP

JVC
VICTOR COMPANY OF JAPAN, LIMITED

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Thank you for purchasing this JVC colour video monitor. Before using it, read and follow all instructions carefully to take fullest advantage of the monitor's performance.

SAFETY PRECAUTIONS

In order to prevent any fatal accidents caused by misoperation or mishandling of the monitor, be fully aware of all the following precautions.

Machine Noise Information Ordinance 3. GSGV, January 18, 1991: The sound pressure level at the operator position is equal or less than 70 dB(A) according to ISO 7779.

WARNINGS

To prevent fire or shock hazard, do not expose this monitor to rain or moisture.
Dangerous high voltages are present inside the unit. Do not remove the cover.
When servicing the monitor, contact qualified service personnel. Never try to service it yourself.

PRECAUTIONS

- Use only the power source specified on the unit.
- When not using this unit for a long period of time, or when cleaning it, be sure to disconnect the power plug from the AC outlet.
- Do not allow anything to rest on the power cord. And do not place this unit where people will tread on the cord. Do not overload wall outlets or power cords as this can result in a fire or electric shock.
- Avoid using this unit under the following conditions:
  - in extremely hot, cold or humid places,
  - in dusty places,
  - near appliances generating strong magnetic fields,
  - in places subject to direct sunlight,
  - in badly ventilated places,
  - in automobiles with doors closed.
- Do not cover the ventilation slots while in operation as this could obstruct the required ventilation flow.
- When dust accumulates on the screen surface, clean it with a soft cloth.
- Unplug this unit from the AC outlet and refer servicing to qualified service personnel under the following conditions:
  - when the power cord is frayed or the plug is damaged,
  - if liquid has been spilled into the unit,
  - if the unit has been dropped or the cabinet has been damaged,
  - when the unit exhibits a distinct change in performance.
- Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Always refer servicing to qualified service personnel.
- When replacement parts are required, have the service personnel verify in writing that the replacement parts he/she uses have the same safety characteristics as the original parts. Use of manufacturer's specified replacement parts can prevent fire, shock, or other hazards.
- Upon completion of any servicing or repair work to this unit, please ask the service personnel to perform the safety check described in the manufacturer's service literature.
- When this unit reaches the end of its useful life, improper disposal could result in a picture tube implosion. Ask qualified service personnel to dispose of this unit.

SCREEN BURN

- It is not recommended to keep a certain still image displayed on screen for a long time as well as displaying extremely bright images on screen. This may cause a burning (sticking) phenomenon on the screen of cathode-ray tube. This problem does not occur as far as displaying normal video playback motion images.

WARNING

DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or adaptor or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not provided with a mains plug, or one has to be fitted, then follow the instruction given below:

IMPORTANT.
The wires in the mains lead on this product are coloured in accordance with the following code:

Green-and-yellow	: Earth
Blue	: Neutral
Brown	: Live

As these colours may not correspond with the coloured marking identifying the terminals in your plug, proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal which is marked with the letter E or the safety earth symbol ⏚ or coloured green or green-and-yellow.

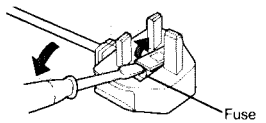
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

When replacing the fuse, be sure to use only a correctly rated approved type, and re-fit the fuse cover.

IF IN DOUBT — CONSULT A COMPETENT ELECTRICIAN.

How To Replace The Fuse
Open the fuse compartment with the blade screwdriver, and replace the fuse.



FEATURES

- **25 cm TV-grade cathode-ray tube**
- **Horizontal resolution of 280 TV lines or more**
- **Professional metal cabinet design**
- **Bridge-connectable input terminals (1 line for video, 1 line for audio)**

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TROUBLESHOOTING 6
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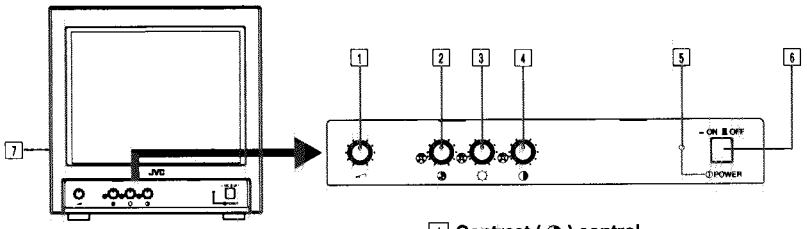
CONTROLS AND FEATURES

■ FRONT



1 Volume (◅) control
Turn to adjust speaker volume.

2 Chroma (◑) control
Turn to adjust picture colour density according to your requirements.

3 Brightness (☼) control
Turn to adjust picture brightness according to your requirements.

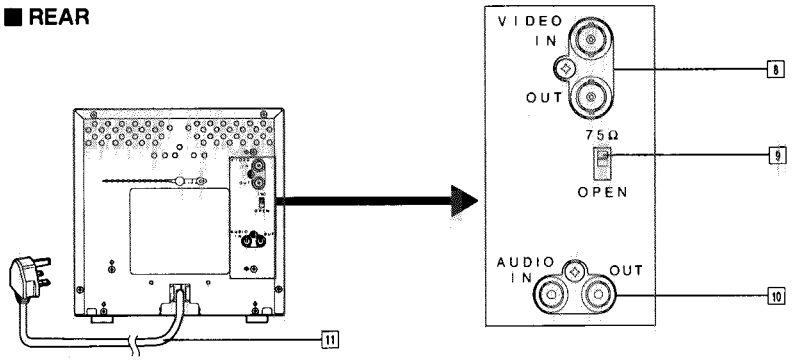
4 Contrast (◑) control
Turn to adjust picture contrast according to your requirements.

5 Power indicator
Glows to indicate that power is on.

6 POWER (⏻) switch
Press to turn the power on or off.

7 Speaker
The built-in speaker is located on the side panel.

■ REAR



8 VIDEO IN (video input), VIDEO OUT (video output) terminals
These are the input and output (bridge-connected output) terminals (BNC) for the video signal. When a signal is input through the IN terminal, a bridge-connected (looping) output can be obtained from the OUT terminal.

Note:
- Confirm if the termination switch setting matches the VIDEO terminal connection.

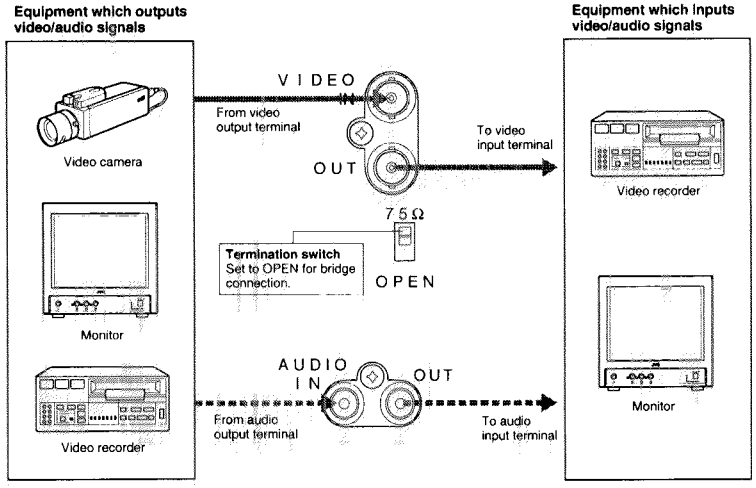
9 Termination switch
Set to OPEN for bridge connection; set to 75Ω for input signal only.

10 AUDIO IN (audio input), AUDIO OUT (audio output) terminals
These are the input and output (bridge-connected output) terminals (RCA) for the audio signal. When a signal is input through the IN terminal, a bridge-connected (looping) output can be obtained from the OUT terminal.

11 Power cord
Connect the power plug to an AC outlet (230 V AC, 50 Hz).

Note:
- The monitor may be equipped with a 3-blade grounding-type plug. If you are unable to insert the plug into the outlet, contact your electrician.

CONNECTION EXAMPLE



Note:
- The illustration above only shows some possible connection examples, for reference. Terminal types and/or connections may differ according to the component connected. Also refer to the Instruction Manual of the component to be connected.
- Before connecting, be sure to turn off the power of all the components.
- For video signal connection, use only a 75Ω coaxial cable.
- Input and output terminals for video or audio are bridge-connected. Do not apply two input signals to both (input and output) terminals at the same time.
- For a bridge (loop) connection, connect each of input and output terminals on the monitor to separate video components. For example, if both of them are connected to a video recorder, the picture will shake abnormally except when in the recorder's play mode. This phenomenon occurs due to a signal circulating around inside a certain component, and is not a malfunction.

BASIC OPERATION

1. To turn the power on: Push the POWER (⏻) switch.

The power indicator glows green. To turn off power, push the POWER (⏻) switch again, and the power indicator goes off.

2. To adjust the audio level:

Turn the volume (◅) control to the right to increase the level, or to the left to decrease the level.

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PICTURE ADJUSTMENTS

Turn a separate front panel control to adjust picture contrast, picture brightness and picture colour density respectively:

- **Chroma (◔) control** — Thinner ... Denser
- **Contrast (◑) control** — Softer ... Clearer
- **Brightness (☼) control** — Darker ... Brighter

TROUBLESHOOTING

Before concluding a problem has occurred, check the following points. If the problem persists after carrying out the checks, disconnect the power cord from the AC outlet and consult the dealer from whom you purchased the monitor.

Problems	Points to be checked	Measures
No power supply.	Is the power plug connected to the AC outlet?	Securely connect the power plug to the AC outlet.
No picture or sound.	Is the monitor turned on?	Press the POWER (⏻) switch to turn the monitor ON (see pages 4 and 5).
	Is an output signal coming in from a source component?	Perform required settings on the output component.
	Is the cable connected improperly?	Connect both the video/audio signal cables securely and properly (see pages 4 and 5).
Normal picture but no sound.	Is audio level set to the minimum?	Adjust the volume control (◅) (see pages 4 and 5).
	Is the audio signal cable connected improperly?	Connect the audio signal cable securely and properly (see pages 4 and 5).
Normal sound but no picture.	Is the video signal cable disconnected or connected improperly?	Connect the video signal cable securely and properly (see pages 4 and 5).
No colour, wrong colour, or dark picture.	Have the picture settings been changed?	Adjust chroma (◔), brightness (☼), and/or contrast (◑) controls (see pages 4 and 6).
Shaking picture.	Is there a device generating a strong magnetic field (motor, transformer, etc.) near the monitor?	Move it away from the monitor until the picture becomes stable.
Unnatural, irregularly coloured or distorted picture.	Is there a speaker, magnet or any other magnetised object near the monitor?	After moving it away from the monitor, turn the monitor's power off. After 30 minutes or more, turn the power on again.

SPECIFICATIONS

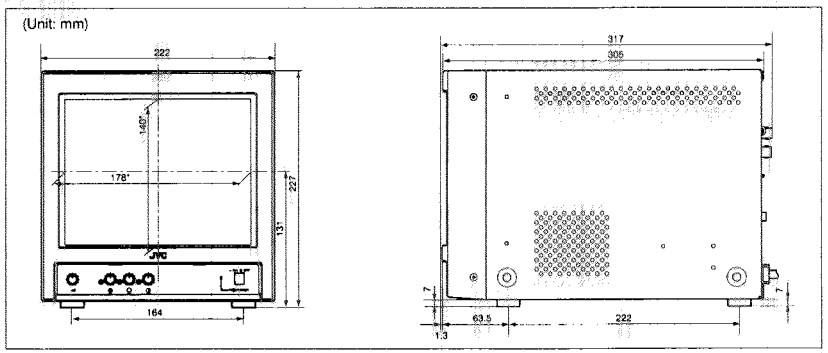
Type	: Colour video monitor
Colour system	: PAL
Picture tube	: 25 cm measured diagonally, 90° deflection, in-line gun, vertical stripe phosphor pitch 0.5 mm
Screen size (W x H)	: 173 x 136 mm
Scanning frequency	: (H) 15.625 kHz (V) 50 Hz
Horizontal resolution	: 280 TV lines or more
Video input	: 1 line, BNC x 2 (with 1 bridge-connected output), 1.0 V p-p, 75Ω, negative sync, bridge connection possible (termination switch provided)
Audio input	: 1 line (monaural), RCA x 2 (with 1 bridge-connected output), 0.5 V rms, high impedance, bridge connection possible
Audio power output (effective)	: 1 W (monaural)
Built-in speaker	: 8 cm round x 1, 8Ω
Operation temperature	: 0 – 40 °C (20 – 80 % RH)
Power requirements	: 230 V AC, 50 Hz
Power consumption	: 0.33 A
Dimensions (W x H x D)	: 222 x 227 x 317 mm
Weight	: 7.0 kg

Optional accessory : Rack-mount adaptor (RK-10E)

Dimensions

* The faceplate dimensions shown are larger than the visible portion of the screen (screen size).

(Unit: mm)



E. & O.E. Design and specifications subject to change without notice.

SPECIFIC SERVICE INSTRUCTIONS

REPLACEMENT OF CHIP COMPONENT

■CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■SOLDERING IRON

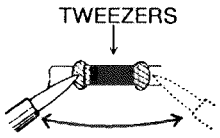
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■REPLACEMENT STEPS

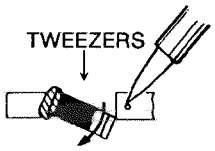
1. How to remove Chip parts

•Resistors, capacitors, etc

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

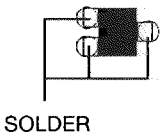


(2) Shift with tweezers and remove the chip part.

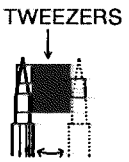


•Transistors, diodes, variable resistors, etc

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

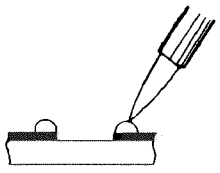


Note: After removing the part, remove remaining solder from the pattern.

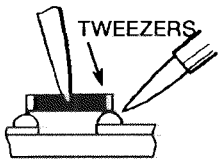
2. How to install Chip parts

•Resistors, capacitors, etc

(1) Apply solder to the pattern as indicated in the figure.



(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

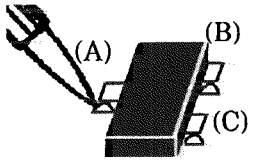


•Transistors, diodes, variable resistors, etc

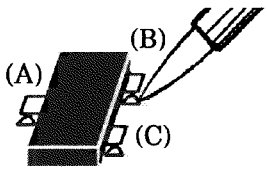
(1) Apply solder to the pattern as indicated in the figure.

(2) Grasp the chip part with tweezers and place it on the solder.

(3) First solder lead A as indicated in the figure.



(4) Then solder leads B and C.



DISASSEMBLY PROCEDURE

[CAUTION]

* Even with the power switch off. some parts of the set are live. Be sure to disconnect the power cord from the AC outlet before disassembly and reassembly.

REMOVING THE TOP COVER

1. Take out 4 screws Ⓐ and 4 screws Ⓑ.
2. Slightly spread the bottom of the top cover. Shift the cover rearward and raise it upward to remove it.

REMOVING THE REAR PANEL

- Remove the top cover.

1. Take out 5 screws.
2. Shift the top portion of the rear panel slightly rearward and raise it upward to remove it.

REMOVING THE BOTTOM COVER

- After removing the top cover and rear panel, follow the steps given below.

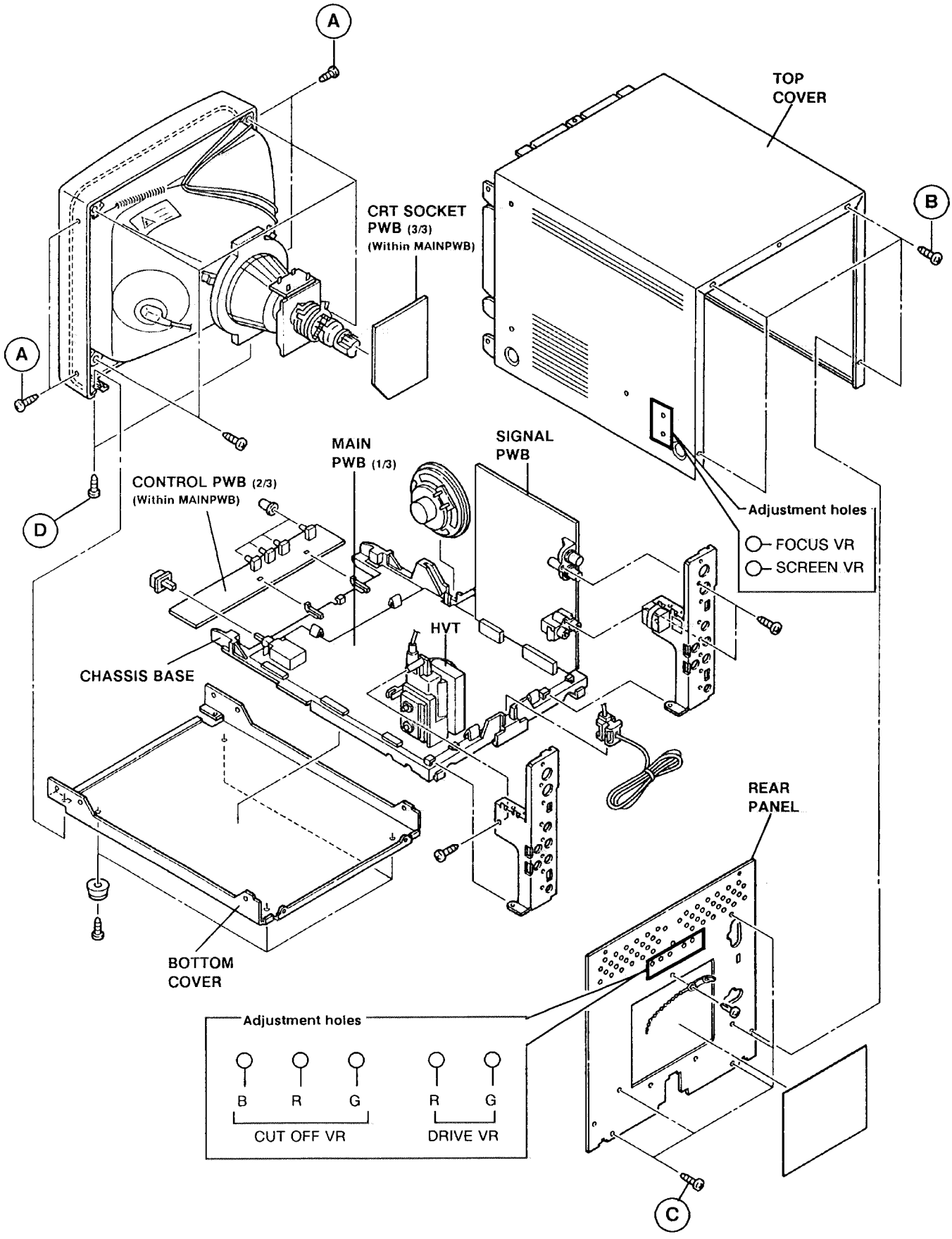
1. Place the front surface downward, then stand the bottom cover while facing it toward you.
   At this time, care must be exercised not to damage the front panel and CRT surface.
2. Loosen the two screws marked Ⓓ as shown in the figure.
3. After pulling the rear panel side of the bottom cover toward you slightly, keep the chassis base from the bottom cover slightly.
4. When the chassis base has been kept from the bottom cover slightly, pull the bottom cover upward while leaving the situation as it is, then remove the bottom cover.
5. When the bottom cover has been removed, you can check the main PWB and control PWB in such a situation.

[CAUTION]

* When erecting the chassis, be careful so that there will be no contacting with other PW board.
* Before turning on power, make sure that the wire connector, CRT earth wire and other connectors properly connected.

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.


A
A
B
C
D
TOP
COVER
CRT SOCKET
PWB (3/3)
(Within MAINPWB)
MAIN
PWB (1/3)
SIGNAL
PWB
CONTROL PWB (2/3)
(Within MAINPWB)
Adjustment holes
FOCUS VR
SCREEN VR
HVT
CHASSIS BASE
REAR
PANEL
BOTTOM
COVER
Adjustment holes
B
R
G
R
G
CUT OFF VR
DRIVE VR

SERVICE ADJUSTMENTS

PRIOR TO STARTING ADJUSTMENT

1. Supply power to the set and measuring instruments and allow to warm up for at least 30 minutes.
2. Confirm the proper AC power voltage is being supplied.
3. Use care not to disturb controls and switches not mentioned in the adjustment items.
4. Refer to adjustment settings and set user operated controls (bright, contrast, chroma, etc.) to the indicated positions.

TOOLS AND FIXTURES FOR ADJUSTMENT

- DC voltmeter (digital voltmeter)
- Oscilloscope
- Signal generator (PAL systems)
  - Color bar and split color bar patterns
  - Crosshatch pattern
  - Cross pattern
  - Red raster pattern
  - Green raster pattern
  - Blue raster pattern
  - Phillips pattern (including R-Y and B-Y)
  - TV resolution pattern
- Color analyzer

ADJUSTMENT SETTINGS

1. **Front controls**

CONTRAST	Detent
BRIGHT	Detent
CHROMA	Detent
VOLUME	Center

2. **Rear switch**

TERMINATION SW (75Ω/OPEN)	: 75Ω

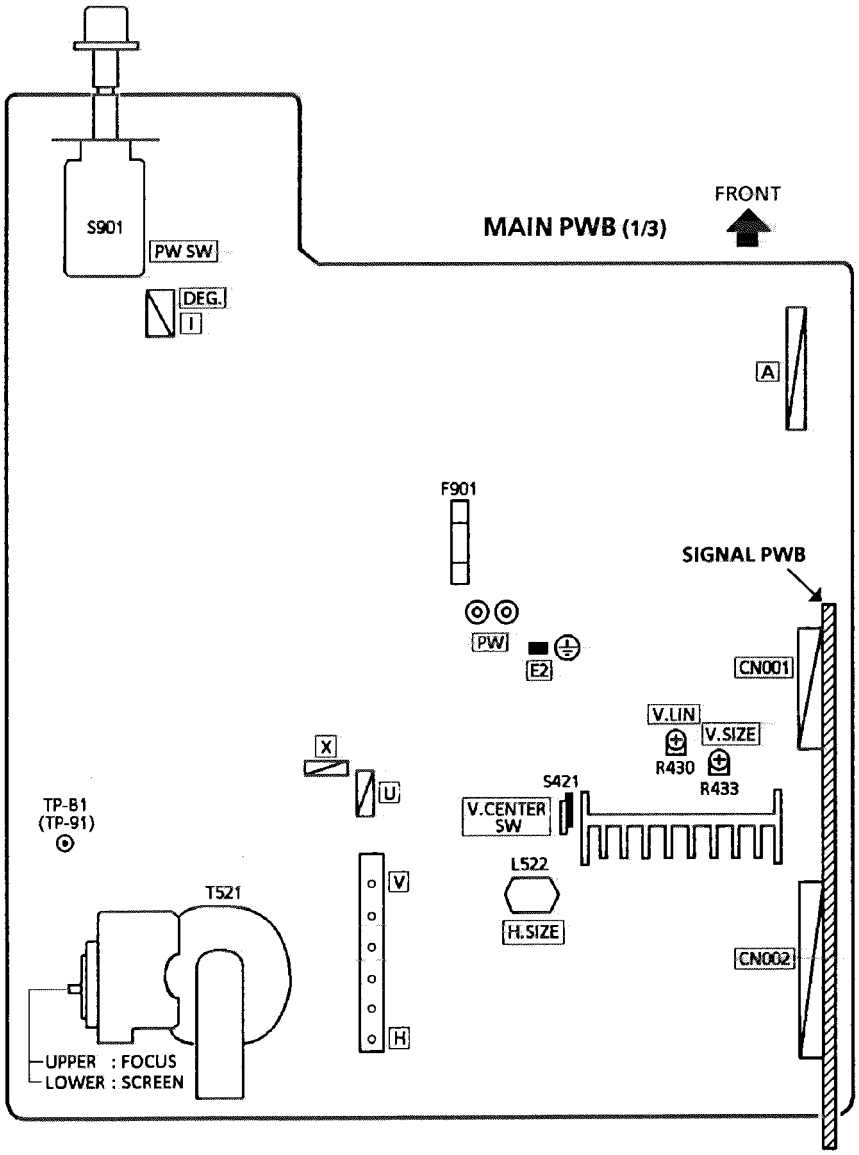
FOCUS, SCREEN, CUT OFF AND DRIVE ADJUSTMENT HOLES

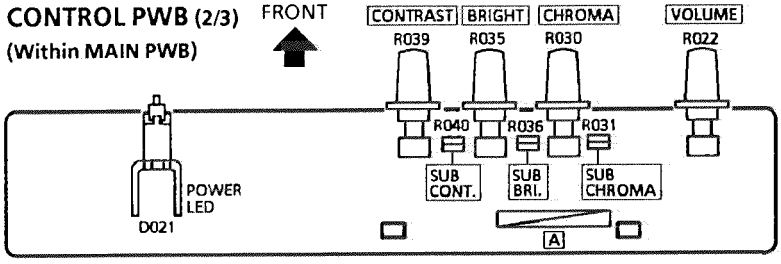
- The Focus and Screen adjustment holes are on the side of the set (see Page 5).
- The Cut off and Drive adjustment holes are on the rear panel of the set (see Page 5).

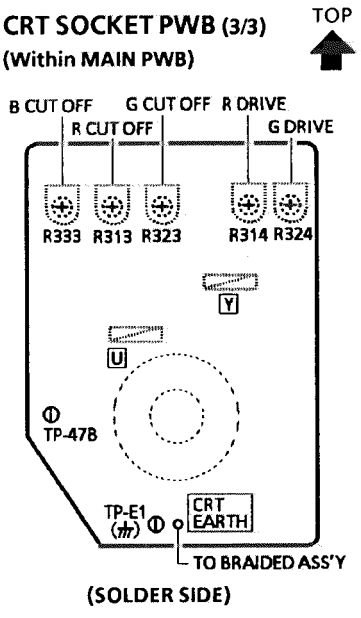
[CAUTION]

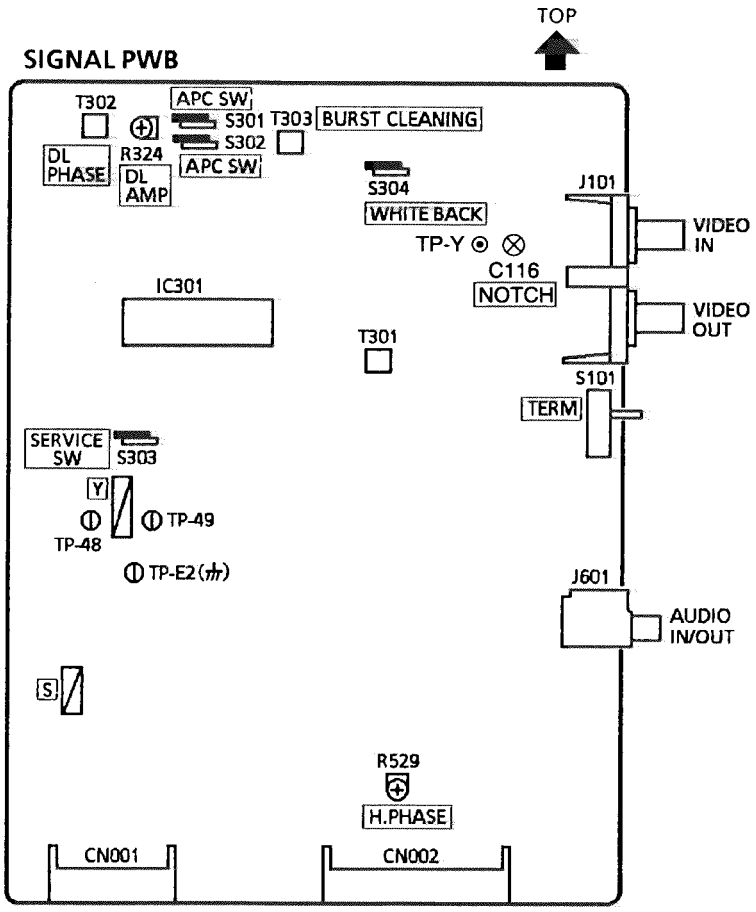
Be sure to use a non-metallic driver for adjusting there VRs. A metallic driver can cause damage by shorting.

ADJUSTMENT LOCATIONS



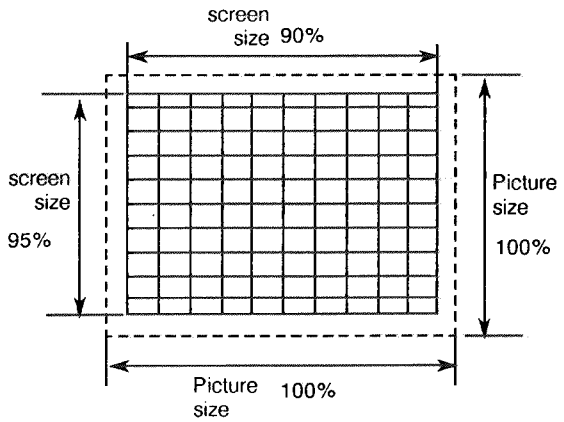




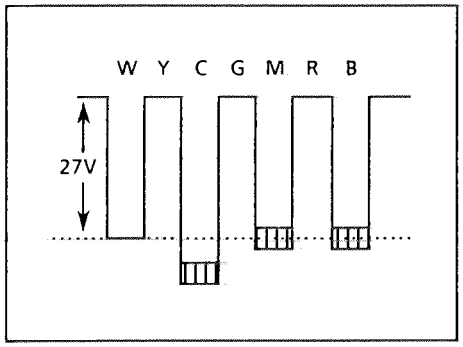
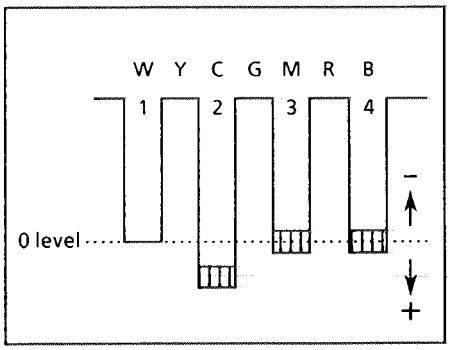
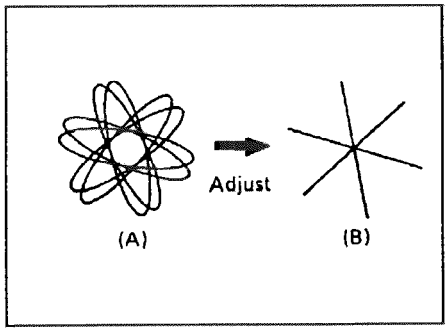

SIGNAL PWB
TOP
T302
APC SW
S301
T303
BURST CLEANING
S302
DL PHASE
R324
DL AMP
APC SW
S304
WHITE BACK
J101
VIDEO IN
TP-Y
C116
NOTCH
IC301
VIDEO OUT
T301
S101
TERM
SERVICE SW
S303
Y
TP-49
TP-48
TP-E2
J601
AUDIO IN/OUT
S
R529
H.PHASE
CN001
CN002

ADJUSTING STEP

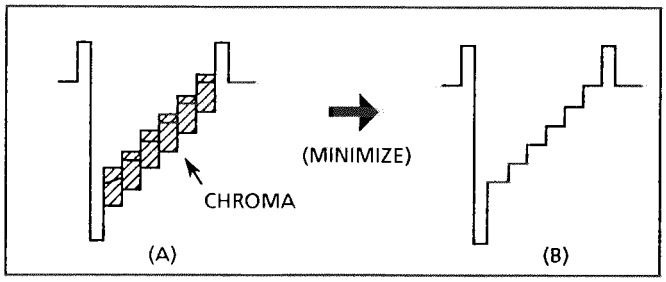
Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
B1 voltage check	Voltmeter Signal generator	TP-B1 TP-E(⏚)		1. Input an all-black signal. 2. Confirm DC 115V ±1V between TP-B1 and TP-E(⏚).
Focus adjustment	Signal generator		FOCUS VR [HVT]	1. Input a crosshatch signal. 2. Turn the FOCUS VR to the range of best focus of the crosshatch signal. Set the VR to the most counter clockwise position in this range.
H. Size and H. Center adjustment	Signal generator		H. SIZE COIL (L522) [MAIN PWB] H. PHASE VR (R529) [SIGNAL PWB]	• Perform after completing brightness and contrast adjustments. 1. Input a crosshatch signal. 2. Adjust the H. PHASE VR to center the Picture on the CRT. 3. Adjust the H. SIZE COIL to set the horizontal size to 90% (Fig. A)
V. Size, V. Center and V. Linearity adjustment	Signal generator		V. SIZE VR (R433) V. CENTER SW (S421) V. LIN VR (R430) [MAIN PWB]	• Perform after completing brightness and contrast adjustments. 1. Input a crosshatch signal. 2. Adjust vertical linearity with the V. LIN VR. 3. Adjust the V. CENTER SWITCH to center the Picture on the CRT. 4. Adjust the V. SIZE VR to set the vertical size to 95% (Fig. A). 5. If necessary, readjust the V. LIN VR.
Brightness adjustment	Signal generator		SUB BRIGHT VR (R036) [CONTROL PWB]	• Perform after completing white balance adjustments. 1. Input a split color bar signal. 2. Adjust the SUB BRIGHT VR to eliminate illumination in the 0% black component.



(Fig. A)

Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
Contrast adjustment 	Signal generator Oscilloscope	TP-47B TP-E1(⏚) [CRT SOCKET PWB]	SUB CONT. VR(R040) [CONTROL PWB]	1. Input a colour bar signal (set for 0.525V between black and white). 2. Connect an oscilloscope to TP-47B and TP-E1(⏚). 3. Adjust the SUB CONTRAST VR to set the level indicated in the figure to 27V.
Chroma adjustment 	Signal generator Oscilloscope	TP-47B TP-E1(⏚) [CRT SOCKET PWB]	SUB CHROMA VR (R031) [CONTROL PWB]	1. Input a color bar signal. 2. Connect an oscilloscope to TP-47B and TP-E1 (⏚). 3. With the no. 1 level W taken as 0 level, adjust the SUB CHROMA VR to set no. 4 B to 0 level.
APC adjustment 	Signal generator Oscilloscope	TP-48 TP-49 TP-E2(⏚)	APC SW (S301, S302) DL PHASE TRANSF.(T302) DL AMP VR (R324) [SIGNAL PWB]	1. Input a color bar signal. 2. Connect the probes of a dual-trace oscilloscope to TP-48 and TP-49(ground at TP-E2). 3. Set the APC SWITCHES (S301 and S302) to S. 4. Set the oscilloscope tie axis to X-Y coordinates. 5. Alternately adjust the DL PHASE TRANSFORMER and DL AMP VR to obtain the waveform B indicated in the figure. 6. Return the APC SWITCHES(S301 and S302) to N.

Item	Test equipment	Test points	Adjustment locations	Adjustment procedure
Burst cleaning adjustment	Signal generator		BURST CLEANING COIL (T303) [SIGNAL PWB]	1. Input a Phillips pattern signal. 2. Adjust the BURST CLEANING COIL to minimize coloration in the R-Y and B-Y components.
Notch circuit adjustment	Signal generator Oscilloscope	TP-Y (Q202 Emitter)	TRIM CAP. (C116) [SIGNAL PWB]	1. Input a color bar signal. 2. Connect an oscilloscope to TP-Y. 3. Adjust the TRIM CAP. so that the figure is altered to (B) from (A).
White balance (low Light) adjustment	Signal generator		SERVICE SW (S303) [SIGNAL PWB] R CUT OFF VR (R313) G CUT OFF VR (R323) B CUT OFF VR (R333) [CRT SOCKET PWB] SCREEN VR [MAIN PWB]	1. Input a monoscope pattern signal. 2. Set the SERVICE SWITCH of the signal PWB to S to produce a signal horizontal line. 3. Turn the RED, GREEN and BLUE CUT OFF VRs fully counter-clockwise. 4. Set the RED and BLUE DRIVE VRs to approximately center positions. 5. Turn the SCREEN VR fully counter-clockwise, then gradually turn it clockwise until a single blue, green or red horizontal line just slightly appears. 6. Turn the CUT OFF VR corresponding to the initial color about 10 degrees clockwise. Again adjust the SCREEN VR to where this color just slightly appears. 7. Adjust the CUT OFF VRs of the other two colors to where the three overlapped colors appear white. 8. Return the SERVICE SWITCH to normal(N). 9. Set for a dark screen and fine adjust the R, G and B CUT OFF VRs to obtain the optimum white color.
White balance (high light) adjustment	Signal generator Colour analyzer		R DRIVE VR (R314) G DRIVE VR (R324) [CRT SOCKET PWB]	1. Input a monoscope pattern signal. 2. Adjust the RED and GREEN DRIVE VRs to produce an overall white screen. • If a color temperature meter is available : Measure the center of the screen with the sensor of the color temperature meter. Adjust the RED and GREEN DRIVE VRs to obtain D6500° K. 3. Turn the contrast and brightness VRs. Confirm correct white balance tracking from low light to high light.



PURITY, CONVERGENCE

PURITY ADJUSTMENT

Before adjusting :

- Turn the screen VR to where the raster dose not appear.
- Set the white back switch (S304) to S, allow to run for at least 30 minutes, then return the switch to N.
- Set the screen VR to the original position.

1. Demagnetize CRT with the demagnetizer.
2. Loosen the retainer screw of the deflection yoke.
3. Remove the wedge.
4. Input a Green Raster signal from the Signal Generator, and turn the screen to Green Raster.
5. Move the deflection yoke backward.
6. Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig. 3)
7. Adjust the gap between two lugs so that the Green Raster will come into the center of the screen. (Fig. 4)
8. Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.
9. Insert the wedge to the top side of the deflection yoke so that it will not move.
10. Input a crosshatch signal.
11. Verify that the screen is horizontal.
12. Input red and Blue Raster signals, and make sure that purity is properly adjusted.

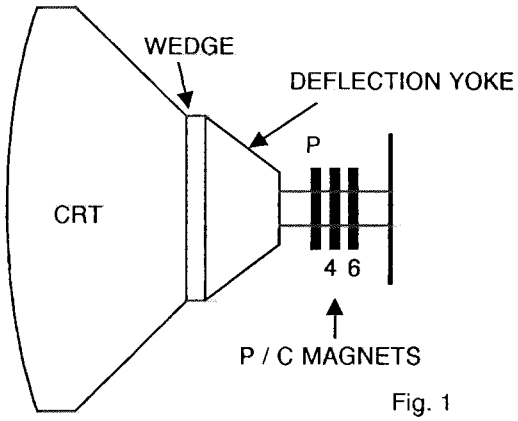


Fig. 1

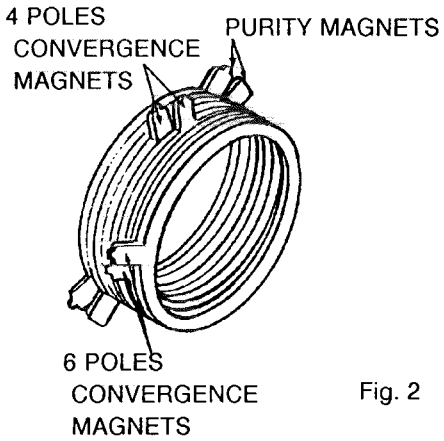
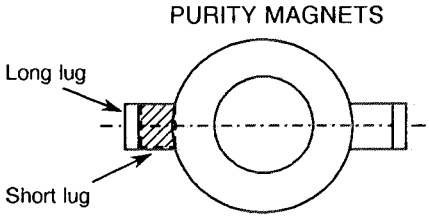


Fig. 2



Bring the long lug over the short lug and position them horizontally.

Fig. 3

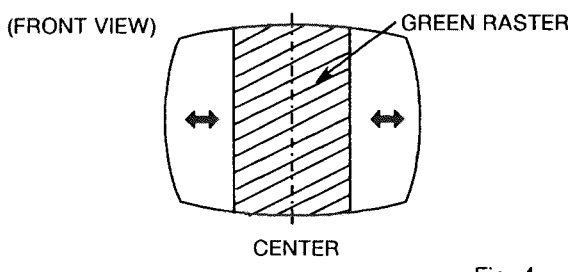


Fig. 4

STATIC CONVERGENCE ADJUSTMENT

1. Input a crosshatch signal.
2. Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen and turn them to magenta (red/blue).
3. Using 6-pole convergence magnets, overlap the magenta (red/blue) and green lines in the center of the screen and turn them to white.
4. Repeat 2 and 3 above, and make best convergence.

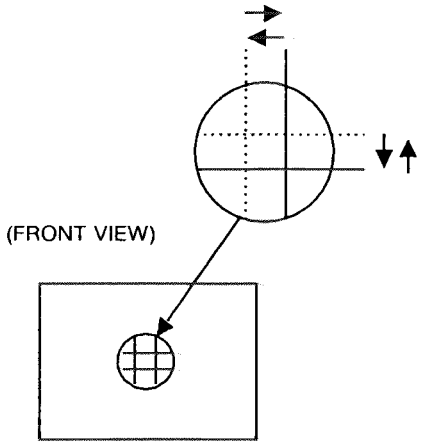


Fig. 1

DYNAMIC CONVERGENCE ADJUSTMENT

1. Move the deflection yoke up and down and overlap the lines in the periphery. (Fig. 2)
2. Move the deflection yoke left to right and overlap the lines in the periphery. (Fig. 3)
3. Repeat 1 and 2 above, and make best convergence.

(FRONT VIEW)

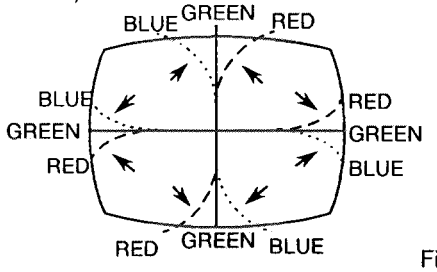


Fig. 2

(FRONT VIEW)

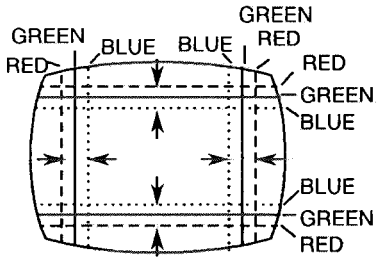


Fig. 3

- After adjustment, fix the wedge at the original position.
  Fasten the retainer screw of the deflection yoke.
  Fix the 6 magnets with glue.

TM-A10E-K STANDARD CIRCUIT DIAGRAM

■NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal :PAL Color bar signal
(2)Setting positions of each knob/button and variable resistor :Original setting position when shipped
(3)Internal resistance of tester :DC 20kΩ/V
(4)Oscilloscope sweeping time :H ⇒20μS/div
:V ⇒5mS/div
:Others ⇒ Sweeping time is specified
(5)Voltage values :All DC voltage values

* Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL[EXAMPLE]

•In the PW board :R1209→R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

•Resistance value
No unit :[Ω]
K :[KΩ]
M :[MΩ]

•Rated allowable power
No indication :1/6[W]
Others :As specified

•Type
No indication :Carbon resistor
OMR :Oxide metal film resistor
MFR :Metal film resistor
MPR :Metal plate resistor
UNFR :Uninflammable resistor
FR :Fusible resistor

* Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

•Capacitance value
1or higher :[pF]
less than 1 :[μF]

•Withstand voltage
No indication :DC50[V]
Others :DC withstand voltage[V]
AC indicated :AC withstand voltage[V]

* Electrolytic Capacitors
47/50[Example]:Capacitance value[μF]/withstand voltage[V]

•Type
No indication :Ceramic capacitor
MY :Mylar capacitor
MM :Metalized mylar capacitor
PP :Polypropylene capacitor
MPP :Metalized polypropylene capacitor
MF :Metalized film capacitor
TF :Thin film capacitor
BP :Bipolar electrolytic capacitor
TAN :Tantalum capacitor

(3)Coils

No unit :[μH]
Others :As specified

(4)Power Supply

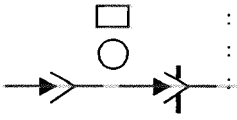
:B1(115V)
:B2(12V)
:5V

* Respective voltage values are indicated.

(5)Test Point

: Test point
: Only test point display

(6)Connecting method



: Connector
: Wrapping or soldering
: Receptacle

(7)Ground symbol

: LIVE side ground
: ISOLATED(NEUTRAL) side ground
: EARTH ground
: DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

(1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

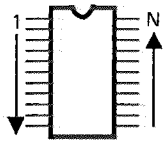
(2) Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

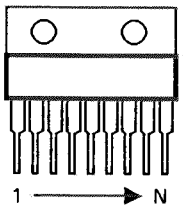
Mar. 1996 No.51112

SEMICONDUCTOR SHAPES

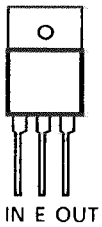
ICs



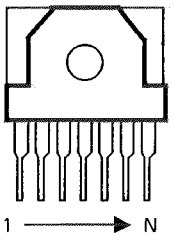
AN5640
HD74LS00P
HD74LS04P
HD74LS05P
M51413ASP
TC4538BP
TC4053BP
TC4066BP



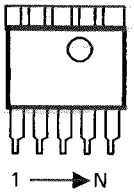
AN5265



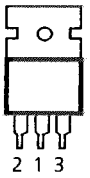
AN7805
AN7809
AN7812F
AN78M15F



LA7830



STR-S6707

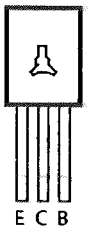


S1854-C1

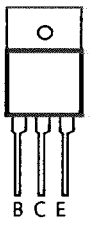
TRANSISTORS

Bottom View

2SA1015(YG)-T
2SA1309
2SA1370(E)
2SA562TM
2SC1472K
2SC1815(YG)-T
2SC1959(Y)
2SC2655(Y)-T
2SC3187-T

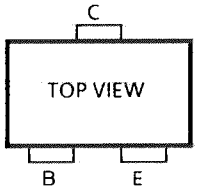


2SC3271(NP)



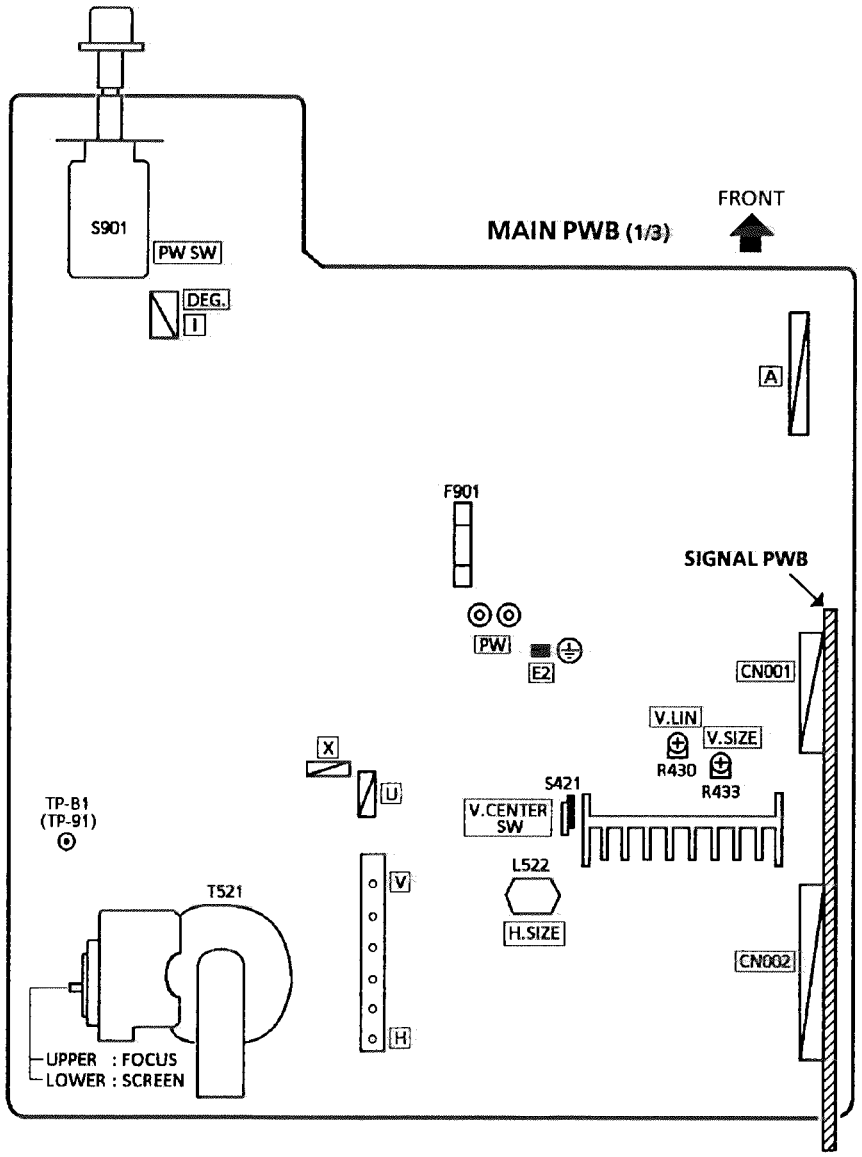
2SD1554-C1

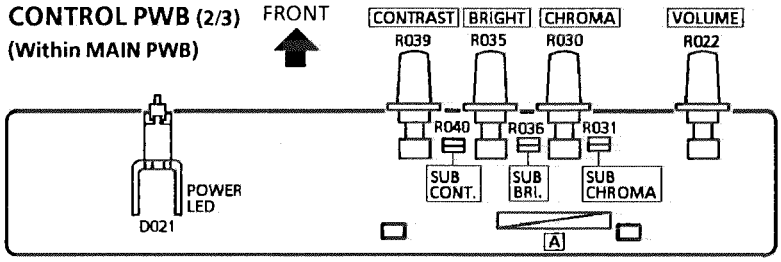
(Chip Transistor)

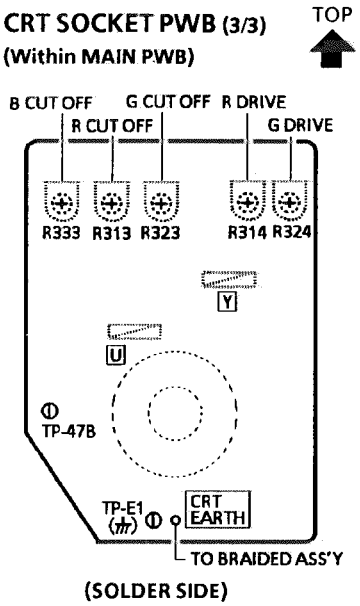


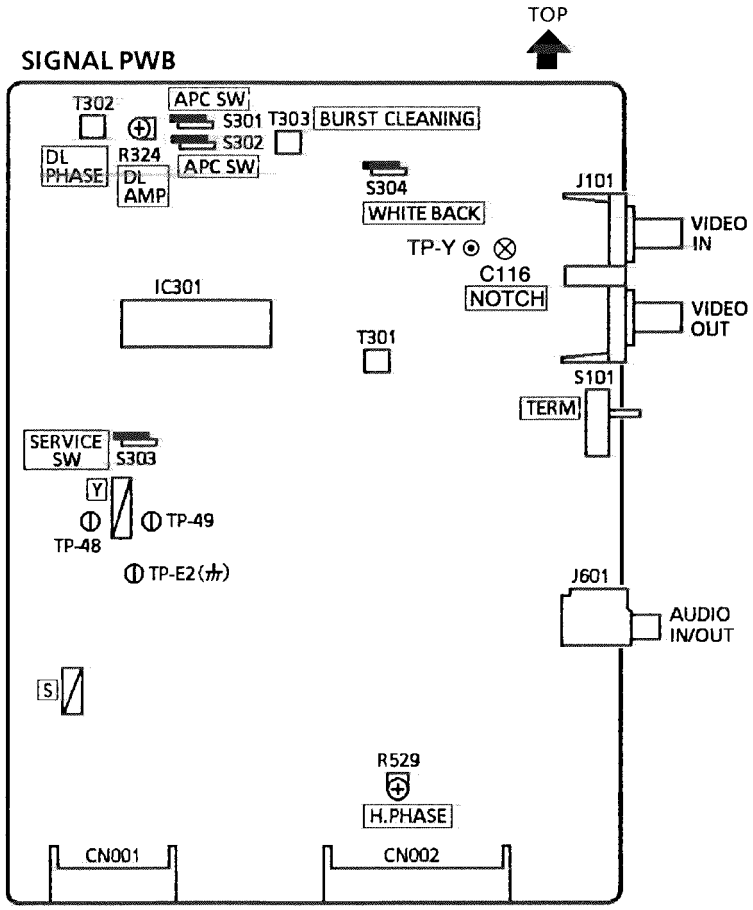
2SA1037K(QR)
2SA1162(YG)
2SC2412K(QR)
2SC2712(YG)

MAIN PARTS LOCATION AND ALIGNMENTS LOCATION

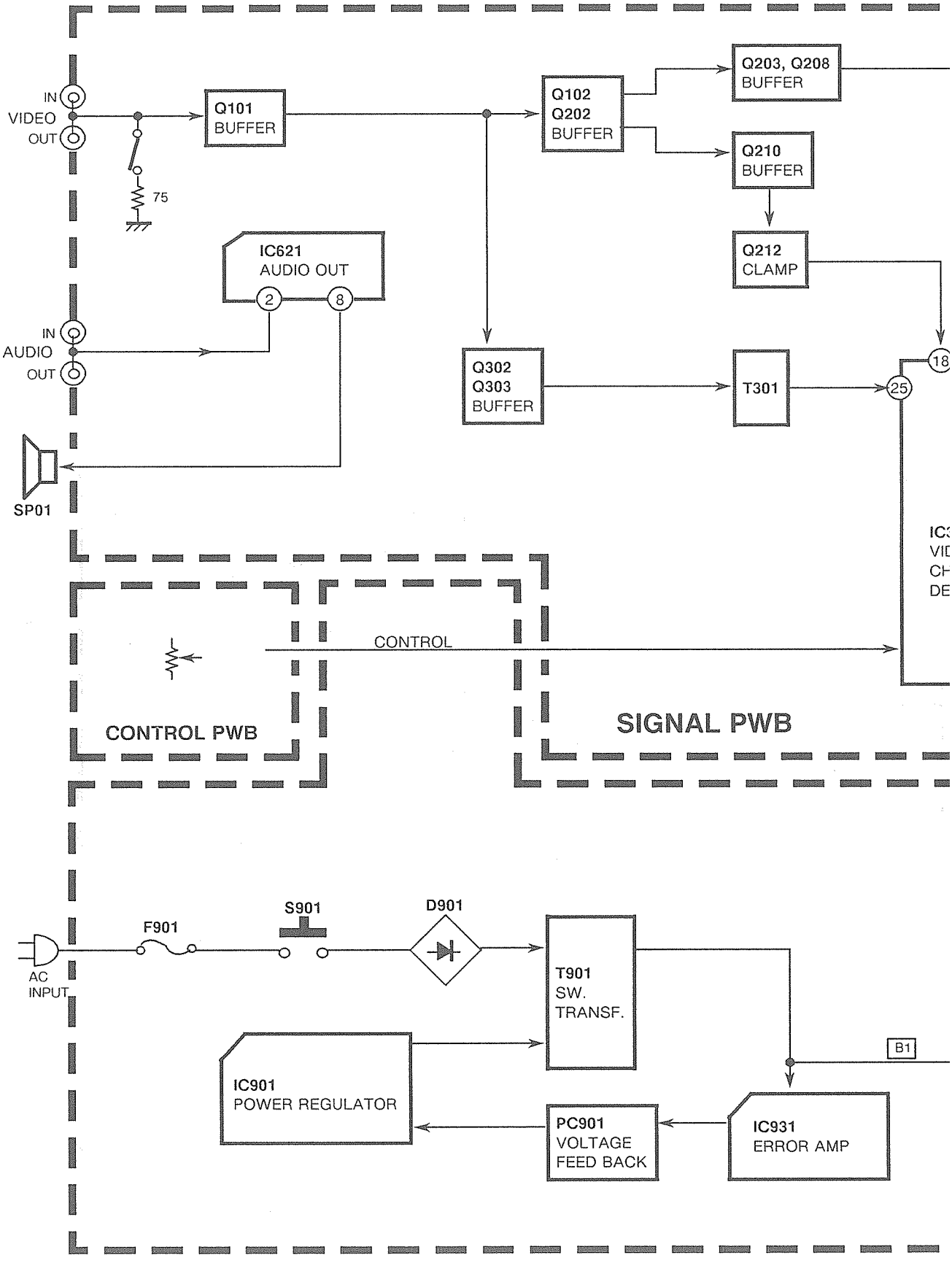


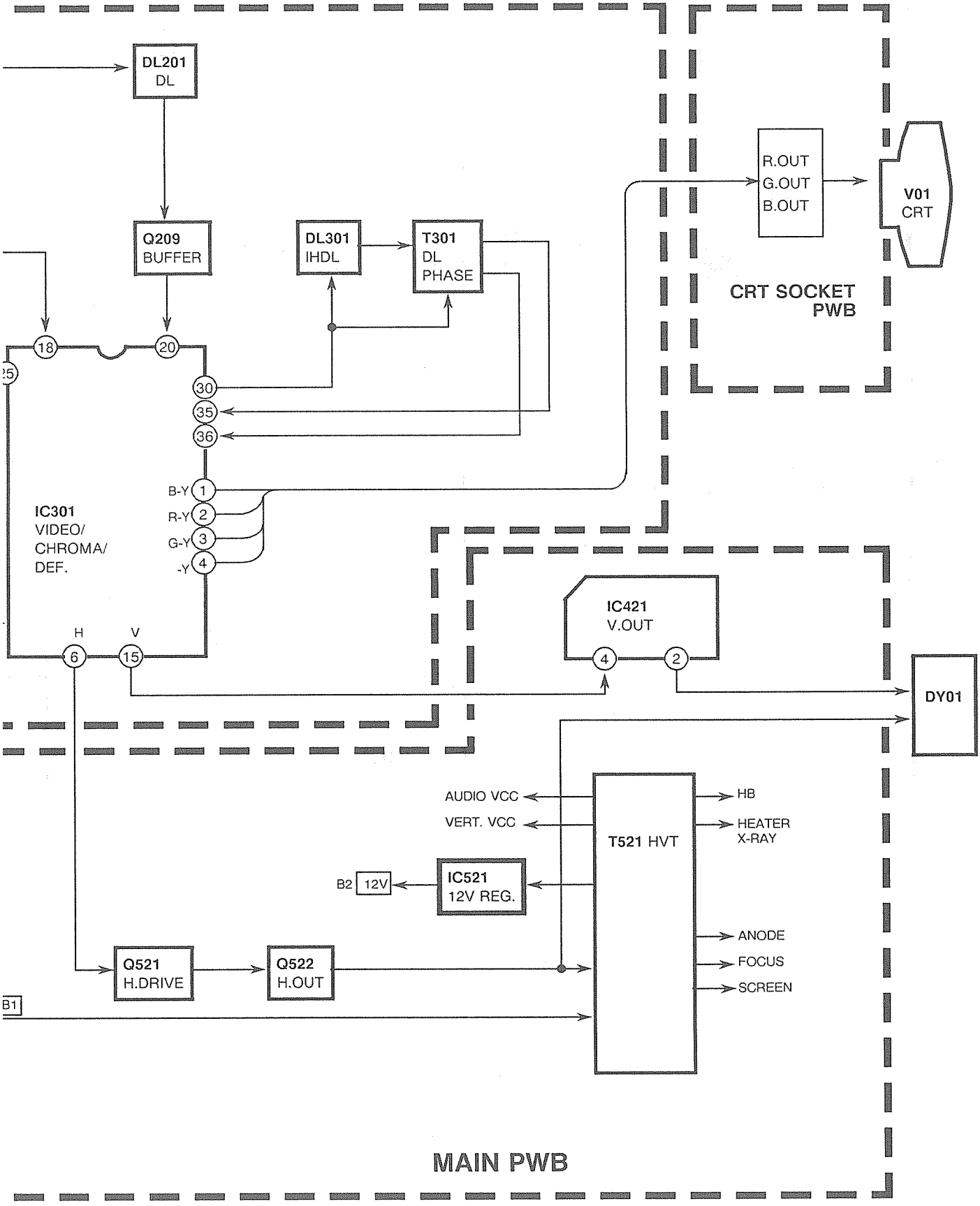





SIGNAL PWB
TOP
T302
APC SW
S301
T303
BURST CLEANING
S302
DL PHASE
R324
DL AMP
APC SW
S304
WHITE BACK
J101
VIDEO IN
TP-Y
C116
NOTCH
VIDEO OUT
IC301
T301
S101
TERM
SERVICE SW
S303
Y
TP-49
TP-48
TP-E2
J601
AUDIO IN/OUT
S
R529
H.PHASE
CN001
CN002

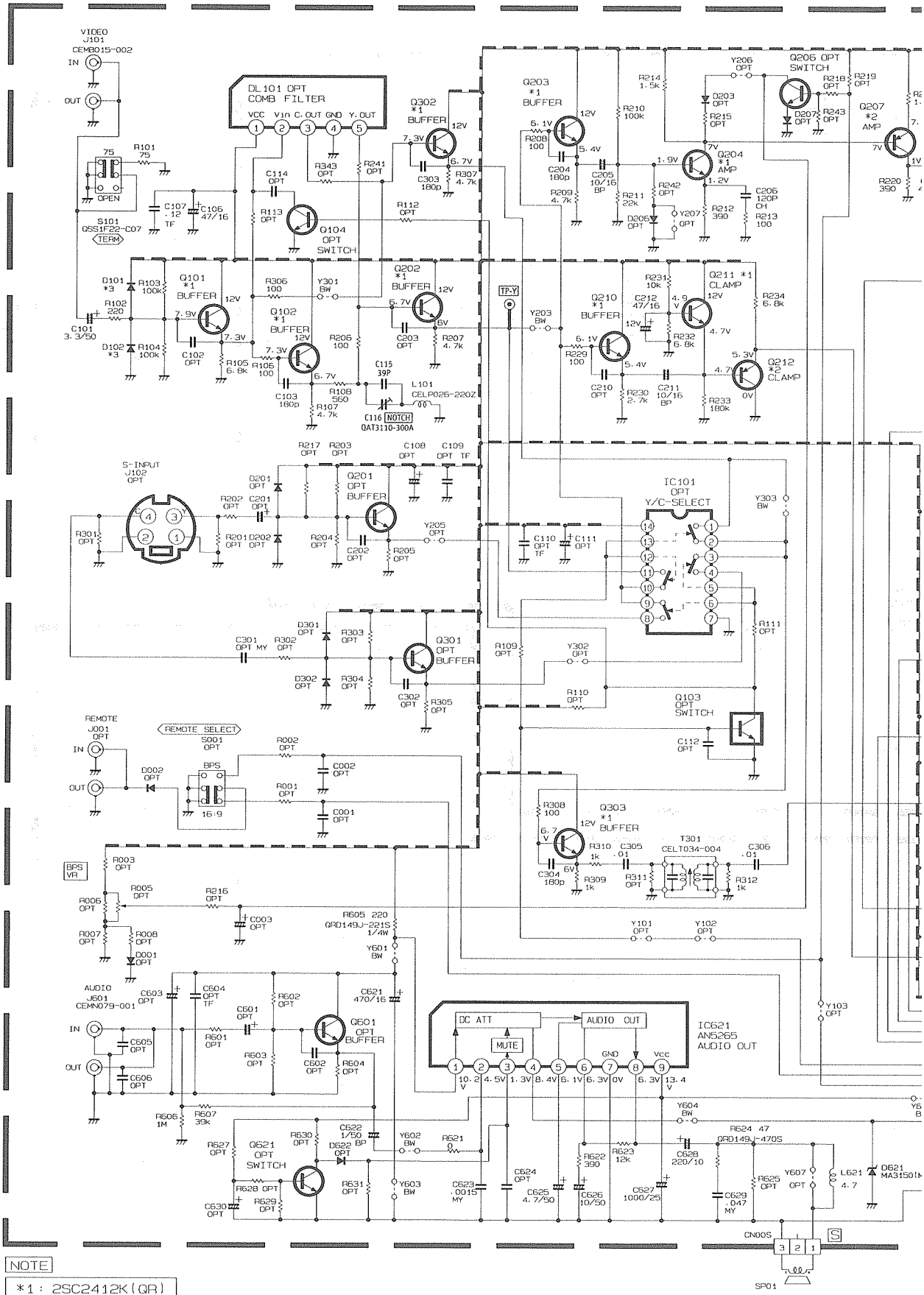
BLOCK DIAGRAM




DL201
DL
Q209
BUFFER
DL301
IHDL
T301
DL
PHASE
R.OUT
G.OUT
B.OUT
V01
CRT
CRT SOCKET
PWB
18
20
30
35
36
B-Y
R-Y
G-Y
-Y
1
2
3
4
IC301
VIDEO/
CHROMA/
DEF.
H
V
6
15
IC421
V.OUT
4
2
DY01
AUDIO VCC
VERT. VCC
T521 HVT
HB
HEATER
X-RAY
B2
12V
IC521
12V REG.
ANODE
FOCUS
SCREEN
Q521
H.DRIVE
Q522
H.OUT
B1
MAIN PWB

CIRCUIT DIAGRAMS AND PWB PATTERNS

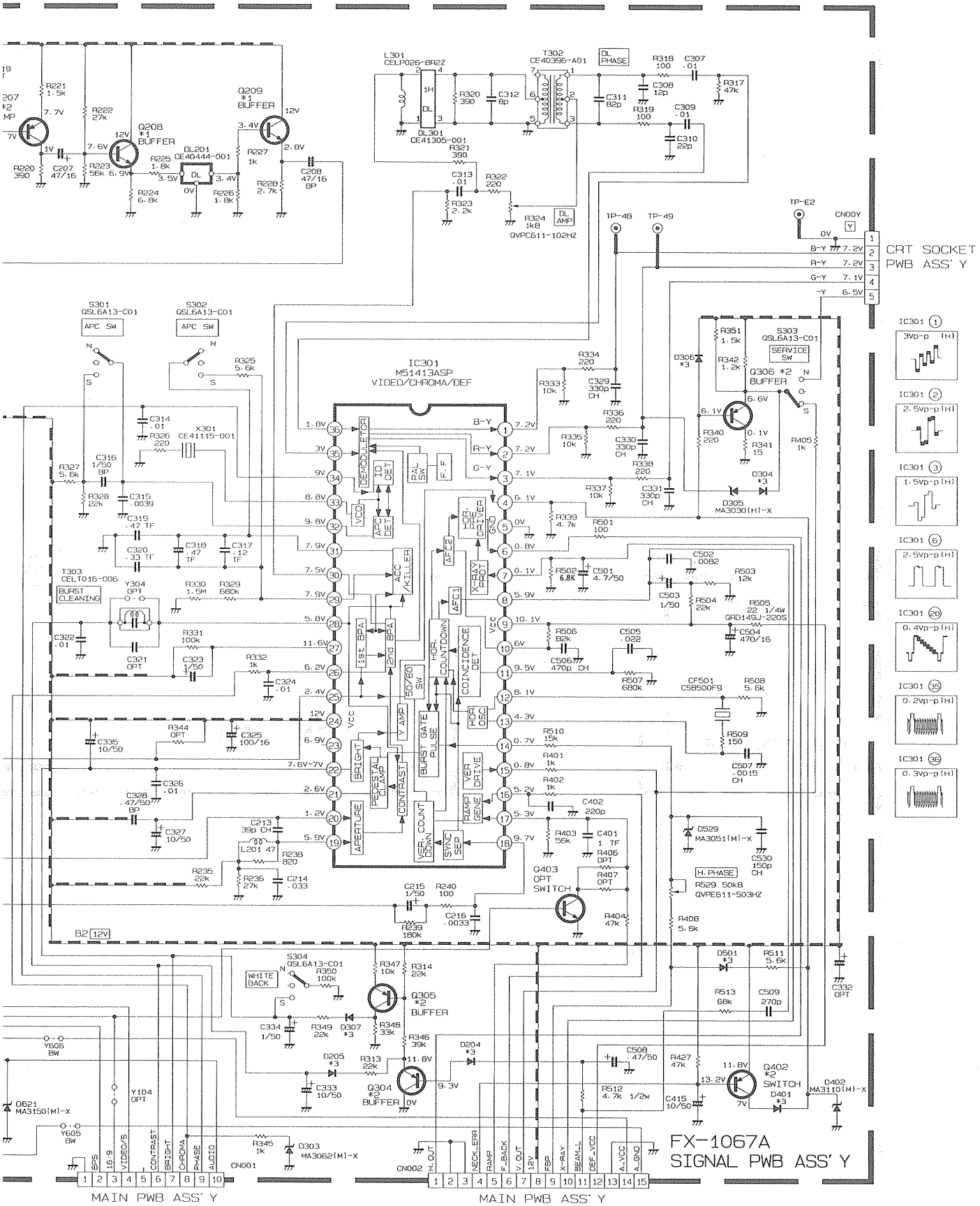
SIGNAL PWB CIRCUIT DIAGRAM



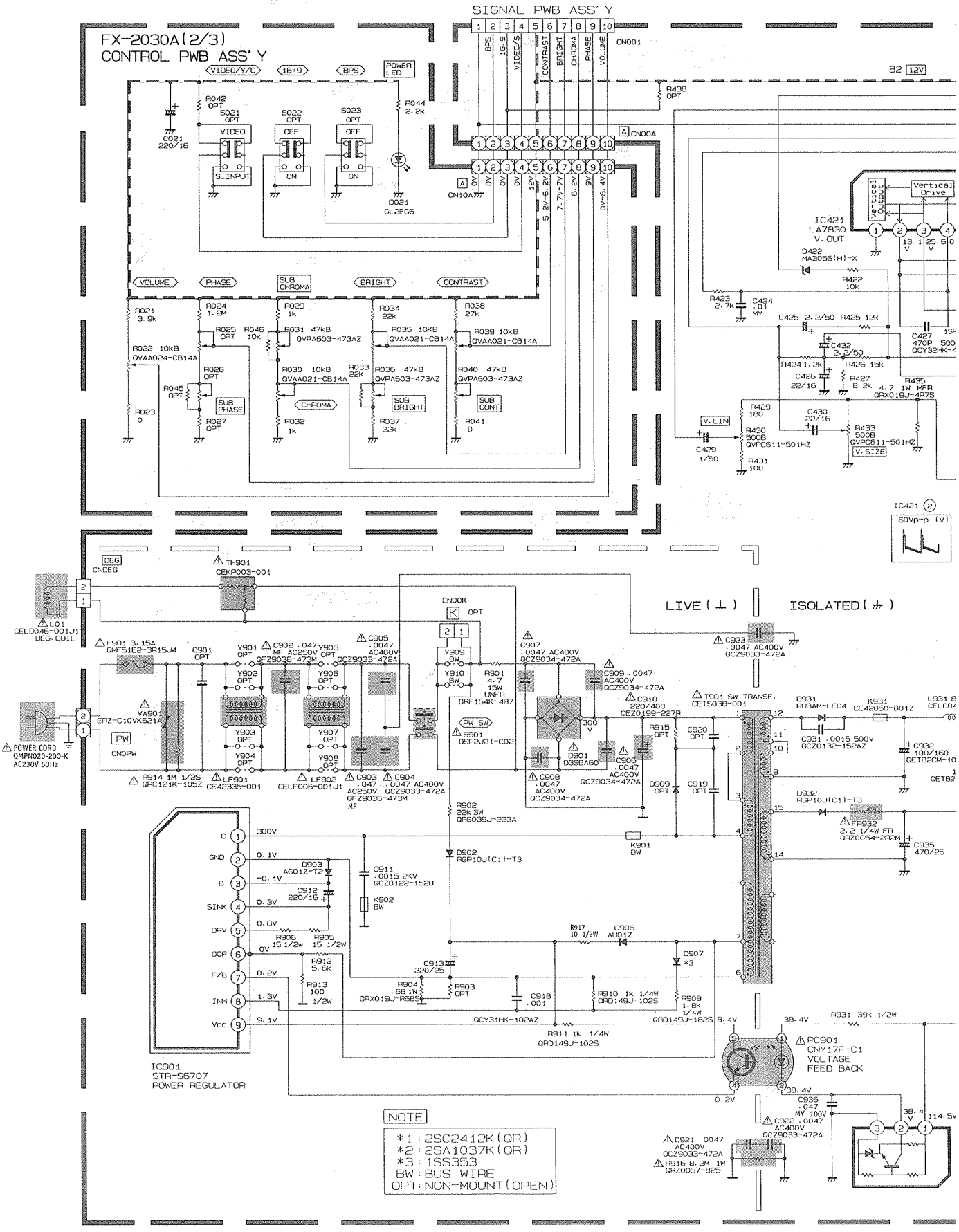
NOTE

*1 : 2SC2412K(QR)
*2 : 2SA1037K(QR)
*3 : 1SS353
BW: BUS WIRE
OPT: NON-MOUNT (OPEN)

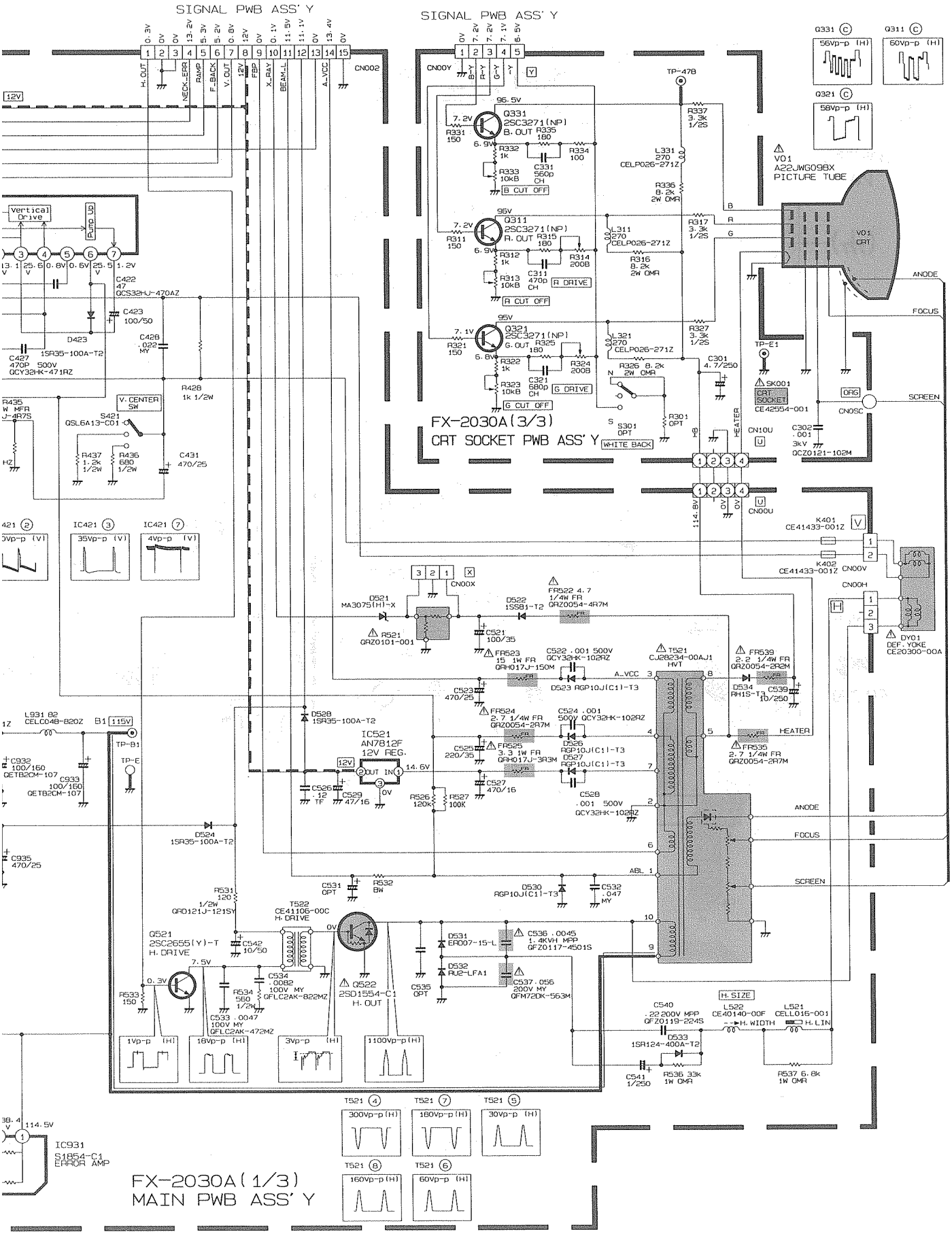
Refer to the following PWB pattern : SIGNAL PWB PATTERN 2-11, 2-12 page.



MAIN PWB(1/3), CONTROL PWB(2/3), CRT SOCKET PWB(3/3) CIRCUIT DIAGRAMS

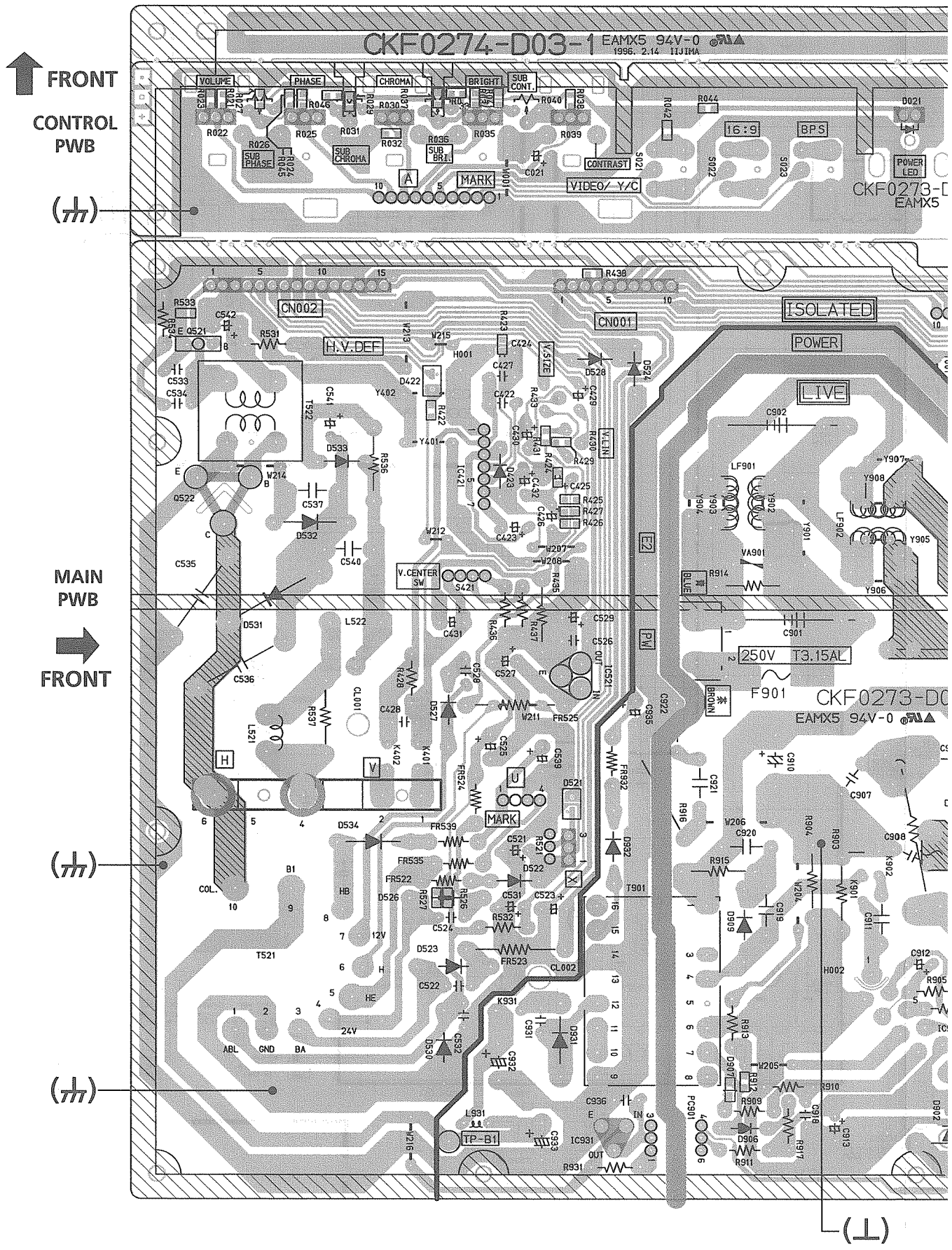


Refer to the following PWB pattern : MAIN PWB PATTERN(1/3), CONTROL PWB PATTERN(2/3), CRT SOCKET PWB PATTERN(3/3) 2-11,12 page.

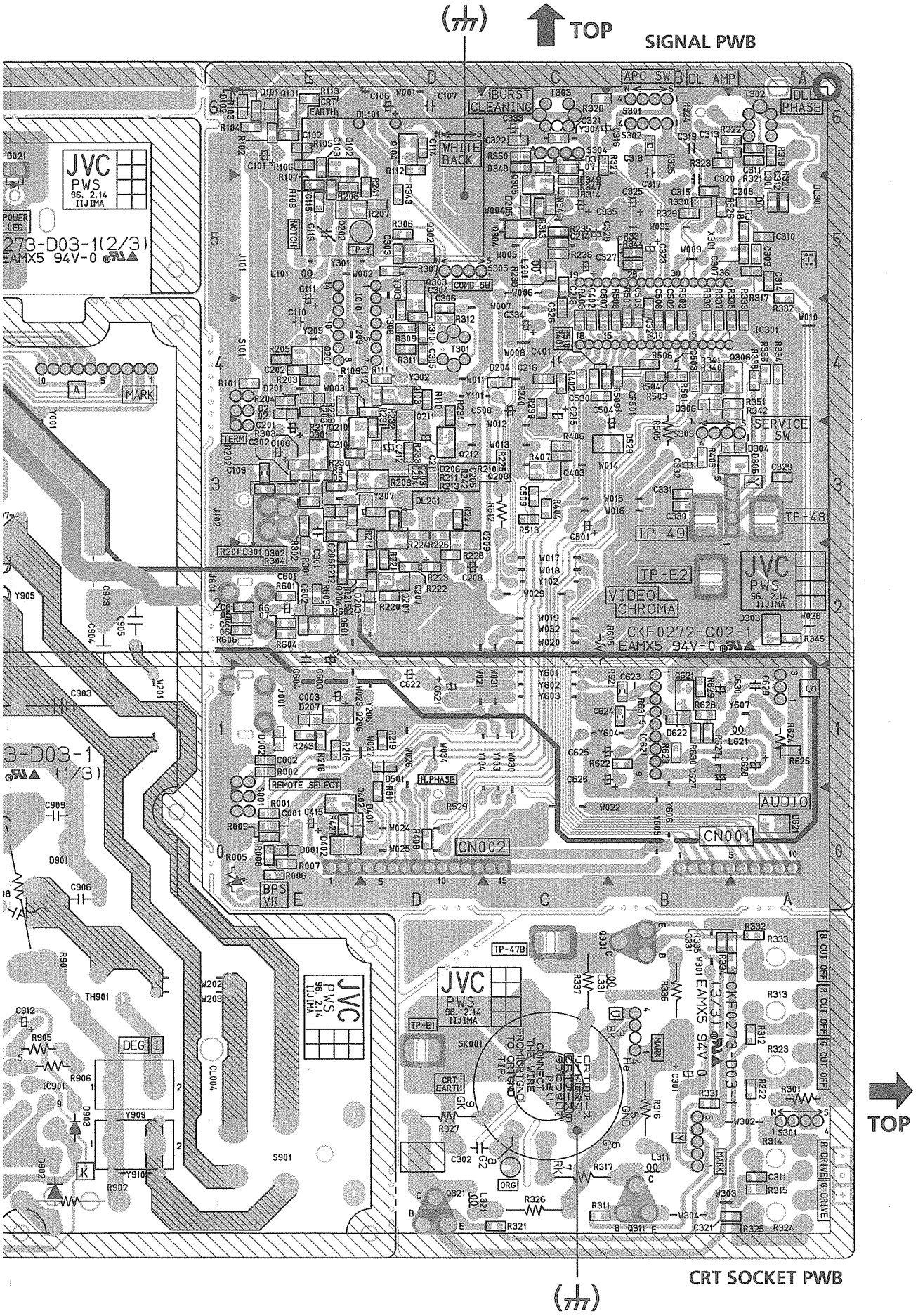


5-1112

SIGNAL PWB PATTERN [FX-1067A]
MAIN PWB(1/3), CONTROL PWB(2/3), CRT SOCKET PWB(3/3) PATTERNS [FX-2030A]



(Magnification Rate 92%)



PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines —— in the Parts No. columns will not be supplied .
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied .
- As a rule, the resistors and capacitors which are indicated as shown in "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" are not shown in the list of the parts on the board .
  When ordering the service parts, confirm the resistance/rated power, capacitance/rated voltage, and type of the parts, then order by the part No. indicated according to "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" .

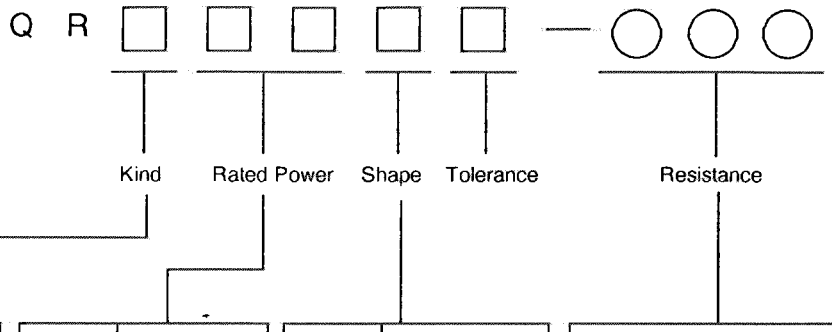
ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% - 10%	+50% - 10%	+80% - 20%	+100% - 0%

HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS

■ RESISTOR



Symbol	Part Name
C	COMP.R
D	C R
S	CH MG R

Symbol	Rated Power
0 1	1 w
1 2	1/2 w
1 4	1/4 w
1 6	1/6 w
1 8	1/8 w

Symbol	Shape
1	Straight lead
8	Chip

Indicate with first two-figure expressed by Ω and following 0.
please note that,in case of resistance less than 10 Ω, a letter "R"will be effective as point.

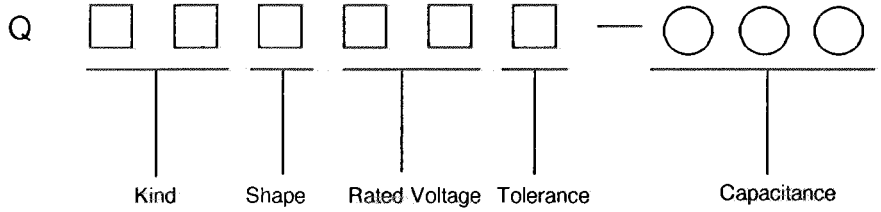
EX.

2.2 Ω = 2R2

470 Ω = 47×10^1 → 471

150kΩ = 15×10^4 → 154

■ CAPACITOR



Symbol	Part Name
CS	C CAP.
CS	CH C CAP.
ET	E CAP.
FM	M CAP.

5Figure / 6Figure	0	1	2
A		10V	100V
C		16V	160V
D			200V
E		25V	250V
H		50V	500V
J	6.3V	63V	
V		35V	

Indicate with first two-figure expressed by pF and following 0.
Please note that,in case of capacitance less than 10 pF a letter "R" will be effective as point.

EX

5pF = 5R0

1000pF = 10×10^2 → 102

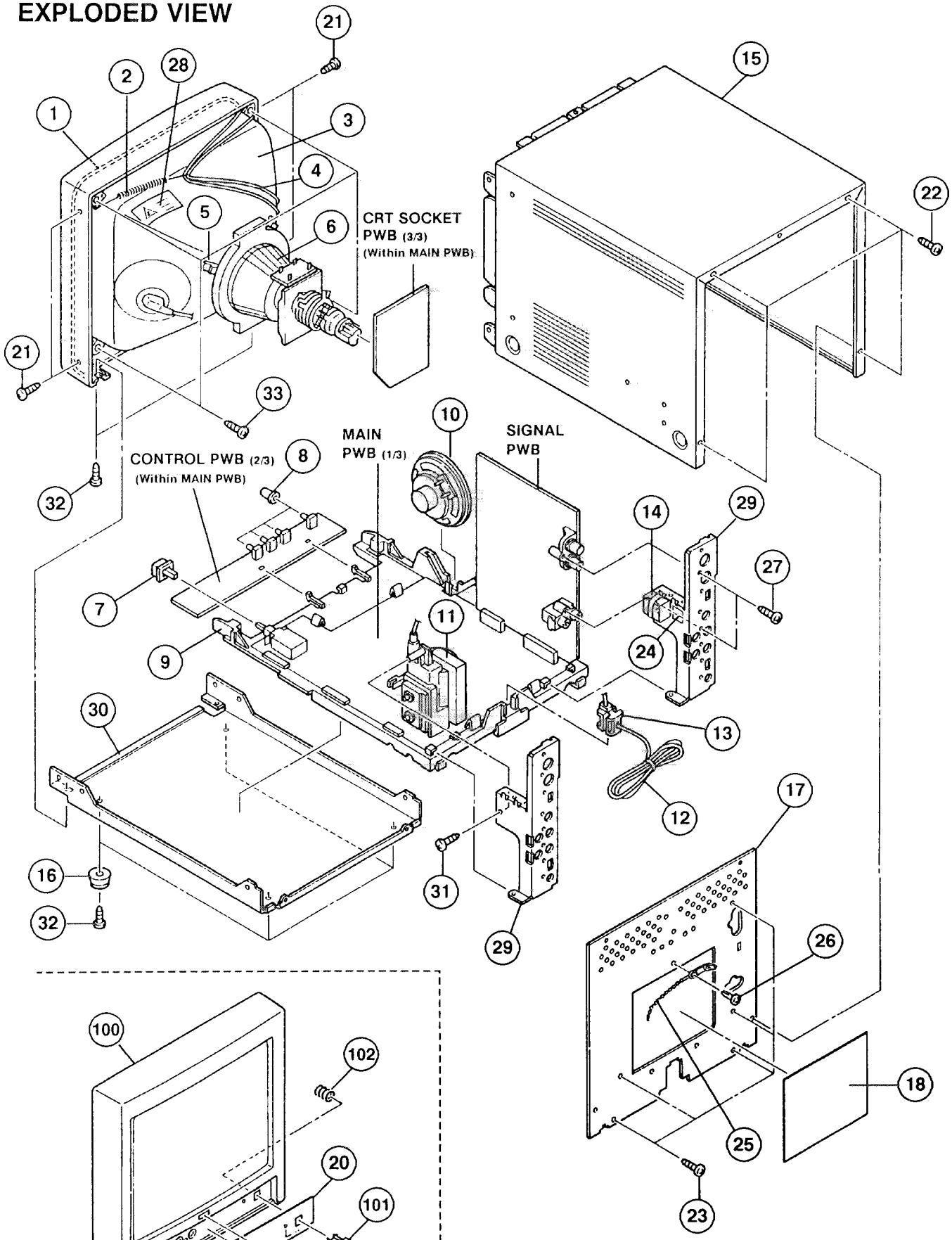
47μF = 47×10^6 → 476

Symbol	Shape
1	Straight lead
1	Leads in the same direction
8	Chip
A	Leads in the same direction (compact part)

EXPLODED VIEW PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	1	CELD046-001J1	DEG.COIL	L01	
	2	CM48174-001	SPRING		
⚠	3	A22JWG098X	PICTURE TUBE	V01	
	4	CHGB0016-0G-N	BRAIDED ASSY		
	5	CE40666-00A	WEDGE ASSY	(×3)	
⚠	6	CE20300-00A	DEF YOKE	DY01	
	7	CM46115-C01	POWER KNOB		
	8	CM46758-A01	VOLUME KNOB	(×4)	
⚠	9	CM12725-B01-V0	CHASSIS BASE		
	10	CEBSS08P-01KJ2	SPEAKER	SP01	
⚠	11	CJ28234-00AJ1	HV TRANSF.	T2521	
⚠	12	QMPN020-200-K	POWER CORD		
	13	A27355-AV0	CORD CLAMP		
	14	CE41355-00B	CORE ASSY		
	15	CM12726-003	TOP COVER		
	16	QZF2207-001	FOOT	(×4)	
	17	CM12727-002	REAR PANEL		
⚠	18	CM22867-024(R)	ROLL R LABEL		
	19	CM48149-A01	JVC MARK		
	20	CM22946-A02	CONTROL SHEET		
	21	SDSF3006M	SCREW	(×4)	
	22	CM44287-00C	ASSY SCREW	(×4)	
	23	CM44287-00C	ASSY SCREW	(×5)	
	24	CM44141-B01	EARTH LABEL		
	25	CM48170-001	BEAD TIE		
	26	CM44117-00A	RIVET		
	27	SBSB3010M	TAPPING SCREW	(×2)	
	28	CM48171-001	HV LABEL		
	29	CM36279-A01	TERMINAL BKT	(×2)	
	30	CM22942-B01	BOTTOM COVER		
	31	SBSF4012Z	T.SCREW		
	32	GBSB3008Z	TAPPING SCREW	(×6)	
	33	GBSF4016M	TAPPING SCREW	(×4)	
⚠	100	CM12723-C0A-M0	FRONT PANEL ASSY	Inc.No.101～102	
	101	CM46756-A01	POWER KNOB		
	102	CM46757-001	SPRING		

EXPLODED VIEW



PRINTED WIRING BOARD PARTS LIST

SIGNAL PW BOARD ASS'Y (FX-1067A)

⚠ Symbol No.	Part No.	Part Name	Description	Local
VARIABLE RESISTOR				
R1324	QVPC611-102HZ	V R(DL AMP)	1kΩ B	
R1529	QVPE611-503HZ	V R(H.PHASE)	50kΩ B	
RESISTOR				
R1605	QRD149J-221S	C R	220 Ω 1/4W	J
R1624	QRD149J-470S	C R	47 Ω 1/4W	J
CAPACITOR				
C1103	NCT03CH-181AY	CHIP CAP.	180 p F 1600V	H
C1107	QFV71HJ-124MZ	TF CAP.	0.12 μ F 50V	J
C1115	NCT03CH-390AY	CHIP CAP.	39 p F 1600V	H
C1116	QAT3110-330A	TRIM CAP.(NOTCH)	30 p F	
C1204	NCT03CH-181AY	CHIP CAP.	180 p F 1600V	H
C1205	QEN61CM-106Z	BP E CAP.	10 μ F 16V	M
C1206	NCT03CH-121AY	CHIP CAP.	120 p F 1600V	H
C1208	QEN61CM-476Z	BP E CAP.	47 μ F 16V	M
C1211	QEN61CM-106Z	BP E CAP.	10 μ F 16V	M
C1213	NCT03CH-390AY	CHIP CAP.	39 p F 1600V	H
C1214	NCB21HK-333AY	CHIP CAP.	0.033 μ F 50V	K
C1216	NCB21HK-332AY	CHIP CAP.	3300 p F 50V	K
C1303-04	NCT03CH-181AY	CHIP CAP.	180 p F 1600V	H
C1305-07	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V	K
C1308	NCT03CH-120AY	CHIP CAP.	12 p F 1600V	H
C1309	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V	K
C1310	NCT03CH-220AY	CHIP CAP.	22 p F 1600V	H
C1311	NCT03CH-820AY	CHIP CAP.	82 p F 1600V	H
C1312	NCT03CH-8R0AY	CHIP CAP.	8.0 μ F 1600V	H
C1313-14	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V	K
C1315	NCB21HK-392AY	CHIP CAP.	3900 p F 50V	K
C1316	QEN61HM-105Z	BP E CAP.	1 μ F 50V	M
C1317	QFV71HJ-124MZ	TF CAP.	0.12 μ F 50V	J
C1318	QEN61HM-474Z	BP E CAP.	0.47 μ F 50V	M
C1319	QFV71HJ-474MZ	TF CAP.	0.47 μ F 50V	J
C1320	QFV71HJ-334MZ	TF CAP.	0.33 μ F 50V	J
C1322	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V	K
C1324	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V	K
C1326	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V	K
C1328	QEN61HM-474Z	BP E CAP.	0.47 μ F 50V	M
C1329-31	NCT03CH-331AY	CHIP CAP.	330 p F 1600V	H
C1401	QFV71HJ-105MZ	TF CAP.	1 μ F 50V	J
C1402	NCT03CH-221AY	CHIP CAP.	220 p F 1600V	H
C1502	NCB21HK-822AY	CHIP CAP.	8200 p F 50V	K
C1505	NCB21HK-223AY	CHIP CAP.	0.022 μ F 50V	K
C1506	NCT03CH-471AY	CHIP CAP.	470 p F 1600V	H
C1507	NCT03CH-152AY	CHIP CAP.	1500 p F 1600V	H
C1508	QEN61HM-474Z	BP E CAP.	0.47 μ F 50V	M
C1509	NCT03CH-271AY	CHIP CAP.	270 p F 1600V	H
C1530	NCT03CH-151AY	CHIP CAP.	150 p F 1600V	H
C1622	QEN61HM-105Z	BP E CAP.	1 μ F 50V	M
C1623	QFLC1HK-152MZ	M CAP.	1500 p F 50V	K
C1627	QEHB1EM-108M	E CAP.	1000 μ F 25V	M
C1629	QFLC1HK-473MZ	M CAP.	0.047 μ F 50V	K
TRANSFORMER				
T1301	CELT034-004	B.PASS TRANSF.		
T1302	CE40396-A01	DL P.TRANSF.		
T1303	CELT016-006	CLOCK TRANSF.		

⚠ Symbol No.	Part No.	Part Name	Description	Local
C O I L				
L1101	CELP026-220Z	PEAKING COIL	22 μH	
L1201	CELP026-470Z	PEAKING COIL	47 μH	
L1301	CELP026-8R2Z	PEAKING COIL	8.2 μH	
L1621	CELP026-4R7Z	PEAKING COIL	4.7 μH	
D I O D E				
D1101-02	1SS353-X	SI.DIODE		
D1204-05	1SS353-X	SI.DIODE		
D1303	MA3062(M)-X	CHIP ZENER DIODE		
D1304	1SS353-X	SI.DIODE		
D1305	MA3030(H)-X	ZENER DIODE		
D1306-07	1SS353-X	SI.DIODE		
D1401	1SS353-X	SI.DIODE		
D1402	MA3110(M)-X	ZENER DIODE		
D1501	1SS353-X	SI.DIODE		
D1529	MA3051(M)-X	ZENER DIODE		
D1621	MA3150(M)-X	ZENER DIODE		
T R A N S I S T O R				
Q1101-02	2SC2412K(QR)-X	CHIP TRANSISTOR		
Q1202-04	2SC2412K(QR)-X	CHIP TRANSISTOR		
Q1207	2SA1037K(QR)-X	CHIP TRANSISTOR		
Q1208-11	2SC2412K(QR)-X	CHIP TRANSISTOR		
Q1212	2SA1037K(QR)-X	CHIP TRANSISTOR		
Q1302-03	2SC2412K(QR)-X	CHIP TRANSISTOR		
Q1304-06	2SA1037K(QR)-X	CHIP TRANSISTOR		
Q1402	2SA1037K(QR)-X	CHIP TRANSISTOR		
I C				
IC1301	M51413ASP	I.C.(MONO-ANA)		
IC1621	AN5265	I.C.(MONO-ANA)		
O T H E R S				
CF1501	CSB500F9	CER.RESONATOR		
DL1201	CE40444-001	DELAY LINE		
DL1301	CE41305-001	DELAY LINE(1H)		
J1101	CEMB015-002	BNC CONNECTOR		
J1601	CEMN079-002	PIN JACK		
S1101	QSS1F22-C07	SLIDE SWITCH	TERM	
S1301-02	QSL6A13-C01	LEVER SWITCH	APC SW	
S1303	QSL6A13-C01	LEVER SWITCH	SERVICE SW	
S1304	QSL6A13-C01	LEVER SWITCH		
X1301	CE41115-001	CRYSTAL		

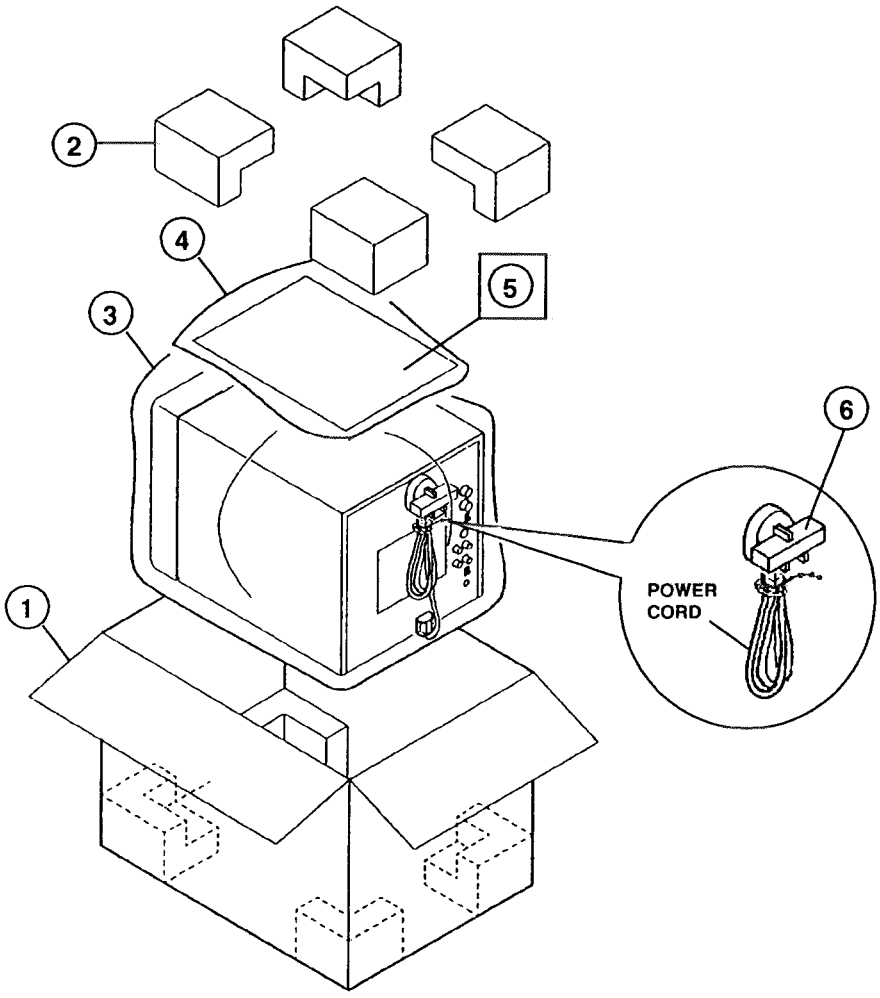
MAIN (1/3), CONTROL (2/3), CRT SOCKET (3/3) PW BOARD ASS'Y (FX-2030A)

⚠	Symbol No.	Part No.	Part Name	Description	Local
	V A R I A B L E R E S I S T O R				
	R2022	QVAA024-CB14A	V R(VOLUME)	10kΩ B	
	R2030	QVAA021-CB14A	V R(CHROMA)	10kΩ B	
	R2031	QVPA603-473AZ	V R(SUB CHROMA)	47kΩ B	
	R2035	QVAA021-CB14A	V R(BRIGHT)	10kΩ B	
	R2036	QVPA603-473AZ	V R(SUB BRIGHT)	47kΩ B	
	R2039	QVAA021-CB14A	V R(CONTRAST)	10kΩ B	
	R2040	QVPA603-473AZ	V R(SUB CONT)	47kΩ B	
	R2313	QVPE805-103H	V R(R CUT OFF)	10kΩ B	
	R2314	QVPE805-201H	V R(R DRIVE)	200 Ω B	
	R2323	QVPE805-103H	V R(G CUT OFF)	10kΩ B	
	R2324	QVPE805-201H	V R(G DRIVE)	200 Ω B	
	R2333	QVPE805-103H	V R(B DRIVE)	10kΩ B	
	R2430	QVPC611-501HZ	V R(V.LIN)	500 Ω B	
	R2433	QVPC611-501HZ	V R(V.SIZE)	500 Ω B	
	R E S I S T O R				
	R2316	QRG029J-822A	OM R	8.2kΩ 2W J	
	R2326	QRG029J-822A	OM R	8.2kΩ 2W J	
	R2336	QRG029J-822A	OM R	8.2kΩ 2W J	
	R2435	QRX019J-4R7S	MF R	4.7 Ω 1W J	
⚠	R2521	QRZ0101-001	R D BLOCK		
	R2536	QRG019J-333S	OM R	33kΩ 1W J	
	R2537	QRG019J-682S	OM R	6.8kΩ 1W J	
	R2901	QRF154K-4R7	UNF R	4.7 Ω 5W J	
	R2902	QRG039J-223A	OM R	22kΩ 3W J	
	R2904	QRX019J-R68S	MF R	0.68 Ω 1W J	
	R2909	QRD149J-182S	C R	1.8kΩ 1/4W J	
	R2910-11	QRD149J-102S	C R	1kΩ 1/4W J	
⚠	R2914	QRC121K-105Z	COMP.R	1MΩ 1/2W K	
⚠	R2916	QRZ0057-825	C R	8.2MΩ 1W J	
	C A P A C I T O R				
	C2301	QETC2EM-475Z	E CAP.	4.7μF 250V M	
	C2302	QCZ0121-102M	C CAP.	1000pF 3000V A	
	C2311	NCT03CH-471AY	CHIP CAP.	470pF 1600V H	
	C2321	NCT03CH-681AY	CHIP CAP.	680pF 1600V H	
	C2331	NCT03CH-561AY	CHIP CAP.	560pF 1600V H	
	C2424	QFLC1HK-103MZ	M CAP.	0.01μF 50V K	
	C2428	QFLC1HK-223MZ	M CAP.	0.022μF 50V K	
	C2521	QETC1VM-107Z	E CAP.	100μF 35V M	
	C2525	QETC1VM-227Z	E CAP.	220μF 35V M	
	C2526	QFV71HJ-124MZ	TF CAP.	0.12μF 50V J	
	C2532	QFLC1HK-473MZ	M CAP.	0.047μF 50V K	
	C2533	QFLC2AK-472MZ	M CAP.	4700pF 100V K	
	C2534	QFLC2AK-822MZ	M CAP.	8200pF 100V K	
⚠	C2536	QFZ0117-4501S	MPP CAP.	4500pF 1.4kVH ±2.5%	
⚠	C2537	QFM72DK-563M	M CAP.	0.056μF 200V K	
	C2539	QETC2EM-106Z	E CAP.	10μF 250V M	
	C2540	QFZ0119-224S	MPP CAP.	0.22μF 200V ±3%	
	C2541	QETC2EM-105Z	E CAP.	1μF 250V M	
	C2542	QETC2CM-105Z	E CAP.	1μF 160V M	
⚠	C2902	QFZ9036-473M	MF CAP.	0.047μFAC250V M	
⚠	C2903	QFZ9036-473M	MF CAP.	0.047μFAC250V M	
⚠	C2904	QCZ9033-472A	C CAP.	4700pFAC400V M	
⚠	C2905	QCZ9033-472A	C CAP.	4700pFAC400V M	
⚠	C2906	QCZ9034-472A	C CAP.	4700pFAC400V P	
⚠	C2907	QCZ9034-472A	C CAP.	4700pFAC400V P	
⚠	C2908	QCZ9034-472A	C CAP.	4700pFAC400V P	
⚠	C2909	QCZ9034-472A	C CAP.	4700pFAC400V P	
⚠	C2910	QEZ0199-227R	E CAP.	220μF 400V	
	C2911	QCZ0122-152U	C CAP.	1500pF 2000V A	
⚠	C2921	QCZ9033-472A	C CAP.	4700pFAC400V M	
⚠	C2922	QCZ9033-472A	C CAP.	4700pFAC400V M	
⚠	C2923	QCZ9033-472A	C CAP.	4700pFAC400V M	

⚠	Symbol No.	Part No.	Part Name	Description			Local
	C A P A C I T O R						
	C2931	QCZ0132-152AZ	C CAP.	1500 p F	500V	K	
	C2932-33	QETB2CM-107	E CAP.	100 µ F	160V	M	
	C2936	QFLC2AK-473MZ	M CAP.	0.047 µ F	100V	K	
	T R A N S F O R M E R						
⚠	T2521	CJ28234-00AJ1	HV TRANSF.				
	T2522	CE41106-00C	DRIVE TRANSF.				
⚠	T2901	CETS038-001	SW TRANSF.				
	C O I L						
	L2311	CELP026-271Z	PEAKING COIL	270 µ H			
	L2321	CELP026-271Z	PEAKING COIL	270 µ H			
	L2331	CELP026-271Z	PEAKING COIL	270 µ H			
	L2521	CELL016-001	LINIARITY COIL				
	L2522	CE40140-00F	WIDTH COIL				
	L2931	CELC048-820Z	CHOKE COIL				
	D I O D E						
	D2021	GL2EG6	L.E.D.(GRN)				
	D2422	MA3056(H)-X	ZENER DIODE				
	D2423	1SR35-100A-T2	SI.DIODE				
	D2521	MA3075(H)-X	ZENER DIODE				
	D2522	1SS81-T2	SI.DIODE				
	D2523	RGP10J(C1)-T3	SI.DIODE				
	D2524	1SR35-100A-T2	SI.DIODE				
	D2526-27	RGP10J(C1)-T3	SI.DIODE				
	D2528	1SR35-100A-T2	SI.DIODE				
	D2530	RGP10J(C1)-T3	SI.DIODE				
	D2531	ERD07-15-L	SI.DIODE				
	D2532	RU2-LFA1	SI.DIODE				
	D2533	1SR124-400A-T2	SI.DIODE				
	D2534	RH1S-T3	SI.DIODE				
⚠	D2901	D3SBA60	DIODE BRIDGE				
	D2902	RGP10J(C1)-T3	SI.DIODE				
	D2903	AG01Z-T2	SI.DIODE				
	D2906	AU01Z	SI.DIODE				
	D2907	1SS353-X	SI.DIODE				
	D2931	RU3AM-LFC4	SI.DIODE				
	D2932	RGP10J(C1)-T3	SI.DIODE				
	T R A N S I S T O R						
	Q2311	2SC3271(NP)-C1	SI.TRANSISTOR				
	Q2321	2SC3271(NP)-C1	SI.TRANSISTOR				
	Q2331	2SC3271(NP)-C1	SI.TRANSISTOR				
	Q2521	2SC2655(Y)-T	SI.TRANSISTOR				
⚠	Q2522	2SD1554-C1	SI.TRANSISTOR	H.OUT			
	I C						
	IC2421	LA7830	I.C.(MONO-ANA)				
	IC2521	AN7812F	I.C.(MONO-ANA)				
	IC2901	STR-S6707	I.C.(HYBRID)				
	IC2931	S1854-C1	I.C.(MONO-ANA)				
	O T H E R S						
		CM46978-A01-H	L.E.D.HOLDER				
⚠	F2901	QMF51E2-3R15J4	FUSE	3.15A			
⚠	FR2522	QRZ0054-4R7M	F R	4.7 Ω	1/4W	J	
⚠	FR2523	QRH017J-150M	F R	15 Ω	1W	J	
⚠	FR2524	QRZ0054-2R7M	F R	2.7 Ω	1/4W	J	
⚠	FR2525	QRH017J-3R3M	F R	3.3 Ω	1W	J	
⚠	FR2535	QRZ0054-2R7M	F R	2.7 Ω	1/4W	J	
⚠	FR2539	QRZ0054-2R2M	F R	2.2 Ω	1/4W	J	
⚠	FR2932	QRZ0054-2R2M	F R	2.2 Ω	1/4W	J	
	K2401-02	CE41433-001Z	BEADS CORE				
	K2931	CE42050-001Z	CORE				
⚠	LF2901	CE42335-001	LINE FILTER				
⚠	LF2902	CELF006-001J1	LINE FILTER				
⚠	PC2901	CNY17F-C1	I.C.(PH.COUPLER)				

⚠	Symbol No.	Part No.	Part Name	Description	Local
	OTHERS				
	S2421	QSL6A13-C01	LEVER SWITCH	V.CENTER SW	
⚠	S2901	QSP2J21-C02	PUSH SWITCH	PW.SW	
⚠	SK2001	CE42554-001	CRT SOCKET		
⚠	TH2901	CEKP003-001	P.THERMISTOR		
⚠	VA2901	ERZ-C10VK621A	VARISTOR		

PACKING



PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description	Local
	1	CP11224-038	PACKING CASE		
	2	CP11460-A0A	CUSHION ASSY	8pcs in 1set	
	3	QPGA060-06005	POLY BAG		
	4	QPGA025-03505	POLY BAG		
⚠	5	CQ40254-001	INST BOOK		
	6	CP40338-001	CUSHION	(For POWER CORD)	

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